GOVERNMENT OF NORTHERN IRELAND

Third Annual Report

of the

Ministry of Agriculture

1923-24.

Presented by Command of
His Grace the Governor of Northern Ireland.

BELFAST:

PRINTED BY THE NORTHERN WHIG, LTD.,
UNDER THE AUTHORITY OF THE CONTROLLER OF H.M. STATIONERY OFFICE
BEING THE OFFICER APPOINTED TO PRINT THE ACTS OF THE
PARLIAMENT OF NORTHERN IRELAND.

To be purchased through any Bookseller or direct from
H.M. STATIONERY OFFICE, 15 Donegall Square West, Belfast.

Price 2/6 net.

Cmd. 40]

22nd May, 1925.

Sir,

I have to acknowledge the receipt of your letter of May 21st forwarding for submission to His Grace the Governor the Third Annual General Report of the Ministry of Agriculture for Northern Ireland.

I am, Sir,

Your obedient Servant,

S. G. TALLENTS,

Imperial Secretary

The Secretary,
Ministry of Agriculture,
Wellington Place,
Belfast.

TABLE OF CONTENTS.

	PAGE
INTRODUCTION	5
GENERAL ADMINISTRATION	5
Consultative Committee	6
Advisory Committees	6
Appointment of County Committees of Agriculture	6
FINANCE	7
AGRICULTURAL EDUCATION	8
Winter Classes	10
Agricultural Experiments	11
Horticultural Experiments	12
Live Stock Experiments	12
Demonstrations	12
Greenmount Agricultural and Horticultural College	12
University Scholarships	13
Ulster Dairy School	13
North-West Agricultural School	14
Improvement of Pastures	14
Educational Exhibits	15
RESEARCH	17
Chemical and Animal Nutrition	17
Seed Testing	21
Plant Diseases	23
Plant Breeding	24
Animal Diseases	27
Poultry	28
SPECIAL EXPERIMENTS	31
Horticulture	31
MARKETING AND TRANSIT OF AGRICULTURAL PRODUCE	31
Fruit	32
Bacon	33
Transit	33
AGRICULTURAL SCHEMES	35
Poultry-keeping	36
Buttermaking	39
Prizes for Cottages and Small Farms	40
Subsidies to Agricultural Shows	41
Horse Breeding	41
Cattle Breeding	44
Registration of Dairy Cattle	46
Milk Recording Associations	49
Special Dairy Bulls	52
Swine Breeding	52
Sheep Breeding	53
Goat Breeding	54
Creameries	54
Surprise Butter Inspections	55
Training of Dairymaids	56
AGRICULTURAL LAWS	57
Horse Breeding Act, 1918	57
Live Stock Breeding Act (Northern Ireland), 1922	58
Quarantine Station	60
Markets and Fairs (Weighing of Cattle) Acts, 1887-1891	60
Destructive Insects and Pests (Northern Ireland) Order, 1922	60
Sale of Diseased Plants (Northern Ireland) Order, 1922	61

Export of Plants 61
American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912 61
Seeds Act, 1920 62
Weeds and Agricultural Seeds (Ireland) Act, 1909 . . . 62
Noxious Weeds 62
Agricultural Seeds 63
Bee Pest Prevention (Ireland) Act, 1908 63
Fertilizers and Feeding Stuffs Act, 1906 64
Sale of Food and Drugs Acts, 1875-1907 65
Marketing of Eggs Act (Northern Ireland), 1924 . . . 66
Stale and Bad Eggs 68
Rules 69
FLAX AND POTATO INDUSTRIES 72
Flax Industry 72
Seed Selection 73
Variety Trials 73
Flax Demonstrations 74
General 74
Scutch Mills Act (Northern Ireland), 1923 . . 74
Flax Water Committee 74
Potato Industry 76
Experimental Work 77
Black Scab in Potatoes 78
Immune Varieties and Inspection in Scheduled Area . 78
Export from Scheduled Area 79
Inspection of Growing Crops of Potatoes outside the Scheduled Area 79
Export from Non-Scheduled Areas 79
Potatoes Importation (Ireland) Order, 1920 . . . 79
Colorado Beetle (Northern Ireland) Order, 1923 . . 80
New Markets 80
Inspectors 80
Supply of Seed Potatoes and Seed Oats in Poor Districts . 80
FORESTRY 81
STATISTICS AND INTELLIGENCE 82
Yield of Crops 83
Intelligence 84
Market Intelligence 85
Census of Production 85
British Empire Exhibition, Wembley . . . . .
SURVEYS 85
Ordnance Survey 86
Field Work 86
Boundary Survey 86
Drawing and Printing 86
Stocks and Sales 86
Manuscript Documents 86
Existing Plates 87
Contracts with Agents 87
Geological Survey 87

GOVERNMENT OF NORTHERN IRELAND.

THIRD ANNUAL REPORT

OF THE

MINISTRY OF AGRICULTURE.

To His Grace, James Albert Edward, Duke of Abercorn, K.P.,
Governor of Northern Ireland.

May it please Your Grace,

I have the honour to submit the third annual general Report of the Ministry of Agriculture for Northern Ireland, covering operations from the 1st October, 1923, to the 30th September, 1924.

The activities of the Ministry are dealt with under the following heads :—

1. General Administration.
2. Finance.
3. Agricultural Education.
4. Research.
5. Special Experiments.
6. Marketing and Transit of Produce.
7. Agricultural Schemes.
8. Agricultural Laws.
9. Flax and Potato Industries.
10. Forestry.
11. Statistics and Intelligence.
12. Surveys.

1. General Administration.

The several committees which were set up by the Ministry to assist and advise it in regard to the various branches of the

agricultural industry met as follows during the period under review :—

Consultative Committee	...	21st November, 1923; 28th March, 1924; 9th May, 1924.
Advisory Committees.		
Horses	...	6th February, 1924; 6th May, 1924.
Cattle	...	21st November, 1923; 7th January, 1924; 6th May, 1924.
Pigs	...	6th May, 1924.
Sheep	...	21st November, 1923; 7th March, 1924; 25th April, 1924.
Flax	...	15th July, 1924.
Marketing of Eggs	...	3rd March, 1924; 27th March, 1924; 1st July, 1924; 22nd July, 1924.

The last-mentioned committee, which was appointed early in 1924 to advise the Ministry on all matters in connection with the egg industry, consists of the following members :—

Adams, J., 16, Donegall Square South, Belfast.
Buchanan, J., Foyle Street, Londonderry.
Gracey, T., Great George's Street, Belfast.
Hewett, A. R., Frederick Place, Lurgan.
Hewitt, S., Edward Street, Portadown.
Magee, J., Belfast and County Down Railway Company.
McDowell, Thomas, 5 Royal Avenue, Belfast.
McElderry, R. A., Ballymoney.
McGuffin, W. J., J.P., York Street, Belfast.
McLaughlin, W., Henry Street, Enniskillen.
O'Neill, P., J.P., Dobbin Street, Armagh.
Perry, J. W., Strand, Londonderry.
Troughton, J., Liskeyborough, Wood View, Armagh.
Tubman, Tempo.
Ward, S., Great Northern Railway Company (Ireland).
Wegg, G. R., London, Midland and Scottish Railway Company (N.C.C.).

The personnel of each of the other committees was practically unchanged from the previous year (vide page 2 of the Ministry's second annual general Report). In consequence of being appointed on the Ministry's central staff, Mr. J. Adams ceased to act on the committees in connection with (a) Marketing of Eggs, and (b) Flax, his place being taken by Mr. J. Johnston, 16 Donegall Square South, Belfast.

Appointment of County Committees of Agriculture.

The tenure of office of a county committee of agriculture, appointed under Section 14 of the Agriculture and Technical Instruction (Ireland) Act, 1899, determines with that of the

council from which it derives its authority, and consequently one of the first duties of a newly-elected county council is to appoint a county committee of agriculture. Prior to the holding of county council elections in Northern Ireland this year the Ministry circularized the secretary of each county council suggesting that the new council should consider the desirability of appointing a small committee as being likely to result in greater uniformity and to secure increased efficiency and expedition in the administration of county schemes, and recommending further that the appointment of the committee should be for the full term of the existence of the county council, i.e., three years, and that each rural district should be represented on the committee. It was further suggested that the council should (1) make it a condition that a member of the committee should *ipso facto* cease to hold office if absent without reasonable cause from four consecutive meetings of the committee, but should be eligible for re-election by the county council; (2) instruct the committee to appoint a chairman and deputy chairman, and (3) require the secretary of the committee to submit to the council at least one month prior to the date fixed for the next election of the county council a return of the number of meetings held and the number of attendances of each member of the committee.

These suggestions were duly considered by county councils when appointing the new committees.

2. Finance.

This section of the Report covers generally the financial year 1st April, 1923, to 31st March, 1924. Summaries of receipts and expenditure are shown in the appendices, pages 4 to 8 inclusive.

Expenditure, including that incurred by county committees of agriculture, may be classified under the following main heads :—

(a) Agricultural Research	£12,899
(b) Agricultural Education	38,971
(c) Live Stock and Poultry Schemes	17,014
(d) Grants to Agricultural Societies and Ministry's Exhibits at Agricultural Shows	4,378
(e) Flax and Potato Industries	7,228
(f) Forestry	3,175
(g) Collection of Agricultural Statistics	2,799
(h) Ordnance and Geological Surveys	8,867
(i) General Expenses	42,842

Towards this expenditure the contribution from local rates was £7,100.

A special grant of £5,100 was provided in the year for agricultural development, being portion of a sum of £54,000 which

the Government made available, so that in certain directions progress might be accelerated. The expenditure of this £54,000 is to be spread over a period of at least four years, and is to be apportioned broadly as follows :—

Agricultural Education	£16,800
Milk-Recording Associations	29,500
Poultry	2,000
Improvement of Pastures	2,900
Improvement of Mountain Sheep	2,800
	£54,000

3. Agricultural Education.

At the close of the year under review the negotiations between the Ministry and the Authorities of The Queen's University of Belfast in regard to the establishment of a faculty of agriculture in the University had practically been concluded. For the purposes of the faculty an arrangement has been entered into with the University Authorities for the erection of a new building in close proximity to the existing buildings. The new building will contain suitably equipped laboratories and class rooms, as well as accommodation for the agricultural chemical and animal nutrition and for the seed testing and plant diseases research departments. The preliminary steps for the carrying out of this work have already been undertaken.

The establishment of this faculty, which will enable agricultural students in Northern Ireland to obtain training of a University standard in applied agricultural sciences and in agricultural research, is essential to complete the Ministry's graduated system of agricultural education. Under this system the training begun in a winter agricultural class may be continued at Greenmount agricultural college to which a farm of 187 acres is attached. The course at this college provides ample facilities for applying to farm practice the scientific knowledge acquired in the classrooms, and it accordingly affords an excellent preparation for a student desiring to enter the agricultural faculty at the University with a view to obtaining more specialized training in the sciences applicable to agriculture.

Scholarships of the value of £65 entitling the holders to a free course of training with board and residence at the Greenmount college are provided by the county committee of each county for competition amongst winter agricultural class students and, in connection with the agricultural faculty at the University, six scholarships, each of the value of £100 per annum and tenable for four years, are offered annually by the Ministry for competition amongst matriculated students. Students who wish to pursue the approved courses of study and those who pass the prescribed examinations will be eligible for the award of the degree of Bachelor of Agriculture.

To enable the Ministry to provide additional staff for county instructional and advisory work a special grant of £16,800 was placed at its disposal towards the close of the year 1923. The results of research work or even experimental and demonstration work, if they are to be of real practical value, require to be brought directly before the notice of the farming community, and experience has shown that this can best be done through the agricultural instructors and overseers in each county. Prior to 1924 there were only eight agricultural instructors and one agricultural overseer employed in the six counties, and owing to the large areas which these officers had to cover it was impossible for them to get into close touch with all the farmers in their respective districts. The provision of additional funds enabled the Ministry to strengthen the staff of instructors and overseers and to reduce the areas under their control, thereby ensuring a greater concentration of instruction and effort in each district.

The additional instructors and overseers were appointed as follows :—

County.	*Instructors.*	*Agricultural Overseers.*
Antrim	1	1
Armagh	—	1
Down	—	2
Fermanagh ...	—	2
Londonderry ...	—	2
Tyrone	1	2
Total	2	10

The agricultural overseers have been located in the backward and mountainous districts which, by force of circumstances, were hitherto more or less undeveloped.

In addition to giving advice and instruction the instructors and overseers laid down considerable numbers of field plots with seed mixtures, manurial mixtures, varieties of crops, etc., in their respective districts.

Scheme of Itinerant Instruction in Agriculture.

No material change occurred in the administration of this scheme, and, as in the previous year, eight instructors were employed, two each in counties Down and Tyrone and one in each of the other counties. From the grant for agricultural development, however, particulars of which will be found on page 7, provision was made for the appointment of two additional agricultural instructors, and these officers were allocated to counties Antrim and Tyrone.

The following table affords information as to duties carried out under this scheme by the instructors :—

	Instructors employed	Farms visited	Lectures delivered	Attendance at lectures	No. of Field experiments carried out	No of demonstrations laid down
Antrim	2*	526	9	460	21	69†
Armagh	1	475	11	269	26	76
Down	2	513	15	829	32	167
Fermanagh	1	615	23	564	12	35
Londonderry	1	571	6	460	23	56
Tyrone	3*	984	21	556	35	176
Total	10	3684	85	3138	149	579

In county Antrim an agricultural overseer and an expert in potato cultivation were employed in addition to the officers mentioned in the above table. Under the terms of the development grant the services of ten additional agricultural overseers were made available early in the spring of 1924, and these officers were appointed as follows :—One each to counties Antrim and Armagh and two to each of the remaining counties.

During the period under review over 5,800 visits to farms were paid by the overseers appointed in connection with the development grant.

Particulars in detail of the work assigned to agricultural instructors are set forth in scheme No. 9 a copy of which may be found at pp. 18-20 of the appendices of the Ministry's report for 1922.

Winter Agricultural Classes.

The scheme was similar to that prescribed by the Ministry for the previous year. The number of classes showed an increase of two as compared with that for 1922, 239 students in all receiving instruction. It is regretted that, owing to insufficient attendance, it was found necessary to discontinue the class held in county Fermanagh, but it is hoped that in the coming year successful classes will be organized.

The following table gives particulars as to the centres at which classes were held during the winter 1923-24 and the number of students enrolled at these centres :—

County	*Centre.*	*No. of students enrolled.*
Antrim	Bushmills	16
,, ...	‡Cushendall	19

*Includes instructors appointed under Development Grant.

†Includes 35 demonstrations laid down by agricultural overseer.

‡Doagh was originally selected as the second centre in County Antrim. The class, however, had to be discontinued owing to insufficient attendance.

County	*Centre.*	*No. of students enrolled.*
Armagh	Edenderry	9
,, ...	Richhill	8
Down	Castlewellan	18
.. ..	Dromara	21
.. ..	Downpatrick	11
.. ..	Newtownards	20
Londonderry ...	Cashel	20
,, ...	Tobermore	20
Tyrone	Castlederg	23
.. ..	Eglish	18
.. ..	Greencastle	19
.. ..	Stewartstown	14

Lectures in veterinary hygiene and horticulture were also delivered at these classes, the former in four and the latter in all counties.

It is gratifying to note that the interest evinced in the working of the scheme last year is being steadily maintained and with the assistance of the additional instructors employed it is proposed to extend this branch of the county committees' activities.

Agricultural Experiments.

The scheme of experiments which is operated through the agricultural instructors was again continued with the following minor variations :—

Experiment to compare various phosphatic fertilisers on potato crop.

Experiment to test the fineness of grinding of mineral phosphates applied to the turnip crop.

Experiment on the manuring of hay for seed.

The following table gives the number of field experiments undertaken during the period under review :—

Experiments.	Manurial Experiments.	Variety of Seed Experiments.	Others.	Total.
Potatoes	16	26	—	42
Turnips	13	12	—	25
Mangels	—	9	—	9
Oats	—	14	6*	20
Wheat	1	4	—	— 5
Barley	—	1	—	1
Hay	10	—	1†	11
Totals	40	66	7	113

*Charlock spraying test.
†Wild white clover test.

Rotation experiments, except those commenced this season, are not included in this statement.

Horticultural Experiments.

Particulars of the scheme of horticultural experiments carried out by the county committees of agriculture will be found on page 41 of the appendices.

The scheme as carried out in 1923 was continued during the past season with the addition of three new experiments, viz., winter spraying of apple trees, experiment on the manuring of apple trees, and an experiment for the treatment of bees for the prevention of Isle of Wight or Acarine disease.

Live Stock Experiments.

An experiment in the feeding of calves for the production of "baby" beef was carried out by the instructors during the season. The object of the experiment was to obtain information as to the possibilities for early maturity for the production of "baby" beef. At the end of the experiment the animals were weighed and the results recorded.

Results.

The results obtained from the various experiments appear in the annual reports of the several county committees of agriculture.

Demonstrations.

Special attention was directed by the Ministry to this branch of field work during the year. Altogether about 550 demonstration plots were laid down, mainly with grass seed mixtures, application of phosphates to pasture, liming of land, and with varieties of different crops. Particular attention was directed to the laying down of plots of wild white clover seed, and to the manuring of pasture with phosphates.

Greenmount Agricultural and Horticultural College.

As pointed out in last year's annual Report, facilities for training at this college which had, prior to 1922, been confined to students from counties Antrim and Down, were extended to all other counties in Northern Ireland and scholarships were offered by each county for competition.

Twenty students, all of whom took out the agricultural course and, with the exception of two, were scholarship-holders, attended the session which commenced on the 3rd January and terminated on the 5th September, 1923. The scholarship-holders were drawn from counties as follows:—Antrim 6; Armagh 2; Down 6; Londonderry 2; Tyrone 2.

The scheme of reconstruction of the buildings, laboratories, etc., being still in progress, the postponement of the opening date of

the session was unavoidable, but, as the arrangements for the accommodation of the full number of students are now practically complete, the 1924-25 and future sessions will cover the full period of from ten to eleven months.

The curriculum followed during the session just completed was on the lines of that prescribed for the previous session; full particulars will be found at pp. 25-33 of the appendices to the Ministry's first annual Report.

University Scholarships.

As already indicated six scholarships in agricultural science, each of the value of £100 per annum and tenable for four years, are offered annually by the Ministry for competition amongst matriculated students desirous of entering the agricultural faculty of The Queen's University of Belfast. The first examination for these scholarships was held in October, 1923, and six candidates were awarded scholarships and commenced their training at the University in the same month. The successful students have now completed one year's course of studies and, having fulfilled the necessary requirements as to progress and conduct, their scholarships have been renewed for a second year.

Six further scholarships will be offered for competition in 1924-25 on conditions similar to those governing the 1923 award.

Ulster Dairy School.

The Ministry's efforts to bring to the notice of the agricultural community the advantages to be gained from the training afforded at this school have been attended with most satisfactory results as is evidenced by the largely increased demand for admission to the school.

During the period under review 97 girls, of whom 15 had entered in the previous year, received instruction at the school, the fees in respect of 33 of these pupils being defrayed from the Anne Hall Endowment, under the terms of which free tuition, etc., is provided for girls from counties Fermanagh and Londonderry. The training of 71 girls was concluded, 28 having been in attendance for one term, 12 for two terms, 20 for three terms and 11 for four or more terms. Certificates were awarded to 23 girls, of whom 2 were approved for the award of creamery scholarships to enable them to qualify for the Ministry's special certificate of competency in butter-making with a view to qualifying for the post of dairymaid in a creamery.

The numbers of pupils in attendance during the session 1923-24 were as follows:—

Term.	*Attendance.*
9th October—21st December	48
2nd January—21st March	46
1st April—13th June	46
15th July—26th September	38
	178

Members of the farming community and others were again afforded an opportunity of visiting the school, fifteen excursions being arranged by branches of the Ulster Farmers' Union and by milk recording associations, one by the Mid-Ulster Shorthorn Breeders' Association and two conducted by county committee instructors. In all, approximately 700 people took part in these excursions.

North-West Agricultural School.

There is accommodation for 24 resident pupils at this school, and four courses of training comprising instruction in poultry-keeping, butter-making, cookery, laundry work, sewing and housewifery(including sick nursing) were held during the year.

The duration of the courses and the numbers in attendance at each were as follows :—

Term.	*Attendance.*
9th October—21st December	13
2nd January—21st March	14
1st April—13th June	19
15th July—26th September	14
	60

All the pupils held scholarships provided by county committees of agriculture.

Particulars of the courses of instruction at the foregoing two schools will be found at pp. 33-35 of the appendices to the Ministry's annual Report for 1922.

Improvement of Pastures.

Towards the end of 1923 a special grant of £2,880, for expenditure over a period of four years, was placed at the disposal of the Ministry in connection with the establishment of special plots to demonstrate the value of wild white clover and phosphatic manures for improving pasture lands. These plots were laid down widely throughout the six counties under the supervision of the agricultural instructors and agricultural overseers in each county. The cost of each plot was limited to £1 and the farmers selected were supplied with the seed or manures free of charge on their undertaking to carry out certain prescribed conditions. Particulars of the number and cost of these plots established in each

county during the period under review are set out in the following table :—

County.	*Wild White Clover.* No. of plots.	Cost. £ s. d.	*Phosphatic Manures.* No. of plots	Cost. £ s. d.
Antrim	88	39 13 0	92	45 17 4
Armagh	50	28 2 6	37	24 11 0
Down	71	17 19 0	—	—
Fermanagh	42	15 19 0	91	53 10 6
Londonderry	77	18 2 4	63	20 10 0
Tyrone	108	54 2 6	58	39 13 10
Totals	436	173 18 4	341	184 2 8

Having regard to the fact that the pasture lands (other than grazed mountain) in Northern Ireland cover an area of about 1,400,000 acres and that a considerable portion of this area might easily be greatly improved and rendered capable of carrying at least fifty per cent. more stock than at present, it will be readily realized that the Ministry's efforts to induce farmers to sow good seeds and seed mixtures (with wild white clover included) and to manure pastures with phosphatic manures promise to be of inestimable benefit to the live stock trade of the country.

Educational Exhibits.

Comprehensive educational exhibits, illustrative of the whole routine of modern farming, were arranged by the Ministry on the occasion of the summer show of the Royal Ulster Agricultural Society, held at Balmoral on 29th and 30th May, and at the North-West Agricultural Society's show, held at Londonderry on 26th June.

Demonstration plots taken from field experiments were used to show how pastures may be improved by the use of wild white clover in seed mixtures and by the application of phosphatic manures. The striking results so obtained—amounting practically to double the original stock-carrying capacity of the pastures —were indicated by charts and diagrams.

The importance of the potato-growing industry was emphasized in the exhibits. Samples of varieties suitable for growing in Northern Ireland were displayed, particulars were placarded of the facilities afforded to growers in the matter of inspection and certification of growing crops by the Ministry, and a special demonstration of proper methods of grading and bagging potatoes was arranged to indicate how the reputation of Northern Ireland potatoes might be improved with a view to securing extended markets and better prices.

In the live stock section the possibilities of producing " baby " beef were demonstrated by the Chemical Research and Animal Nutrition Division. Seven lots of Shorthorn and Aberdeen Angus crosses fed for " baby " beef were on view at Balmoral with store-

fed animals alongside for comparison—the cost of production in each case being set out in the form of charts. Another demonstration in this section showed that pigs can be fattened and calves can be reared successfully without cooking or scalding the meal portion of their food.

The exhibit arranged by the Seed Testing and Plant Diseases Division included modern methods of seed testing, samples of weed seeds and other impurities, and specimens showing the wide variety of diseases which attack farm crops.

Specimens in the Animals Diseases Division section showed the serious nature of the common diseases affecting poultry.

The Plant Breeding Division displayed a series of exhibits, including the well-known varieties of cereals, and indicating the objects and progress of research in this branch.

The Poultry Division staged exhibits covering the whole business of poultry raising—special attention being devoted to the subject of foods and the importance of an adequate supply of minerals and vitamines in the case of chickens and laying flocks.

In the Horticultural section a prominent feature was a demonstration of improved methods of preserving fruits and vegetables by bottling. In this section visitors were provided with an opportunity of studying specimens and diagrams of the various diseases and pests common to orchards in Northern Ireland, as well as results obtained from spraying experiments at various centres.

Practical demonstrations were given in the Dairying section of methods of milk-testing and the estimation of butter-fat in milk. The composition of milk, butter and cheese was shown in a series of attractive exhibits.

In the Marketing section attention was directed to the need for improvement in the present methods of testing, grading and packing of eggs for export.

The educational work in progress at the Ulster Dairy School, Cookstown, was represented by exhibits including specimens of work done by pupils in the departments of the school devoted to dairying, poultry and domestic economy.

British Empire Exhibition, Wembley.

Advantage was taken by the Ministry of the opportunity afforded of participating in the Ulster Section of the British Empire Exhibition to arrange an exhibit demonstrating the importance of Northern Ireland to Great Britain as a source of supply of agricultural products.

The exhibit, which attracted much attention, consisted of (1) a contour map of Northern Ireland on which, by the aid of coloured electric lights, details of the principal features of the agricultural industry in Northern Ireland, such as the production

of cattle, pigs, poultry, eggs, potatoes, grass seeds, flax, etc., were shown and (2) a series of photographs showing the more prominent types of live stock and illustrative of the Ministry's activities in connection with agricultural education and research.

4. Research.

Chemical Research Division.

During the past year considerable progress has been made with the several investigations in hand.

Phosphates.—Particulars of these experiments have already been recorded in the Ministry's first and second annual general Reports. The results of the experiments laid down on potatoes last year are now available, and indicate that rock phosphates cannot be expected to give as good results as superphosphates. A further series of experiments on the turnip and on the potato crop were laid down during the past year. This investigation is now reaching a stage at which helpful conclusions may be drawn, and it is hoped shortly to publish a complete account of these experiments. In general it may be said that rock or mineral phosphates of the North African type will give, under the climatic conditions of Northern Ireland, as good results on the turnip crop as superphosphate or the best grades of basic slag. With the object of ascertaining whether still finer grinding of the rock phosphate would lead to better results a series of experiments were laid down during the past year with a standard rock phosphate ground to various degrees of fineness, namely through sieves with 10,000, 25,000 and 32,000 holes to the square inch.

The investigation to determine by means of grazing trials the effect of various types of phosphates in improving the quality and quantity of the herbage has unfortunately been checked by the loss of one of the experimental centres. It became necessary, owing to the death of the owner, to discontinue the experiment at Woburn. A grazing trial with sheep at the Armoy centre was brought to a successful conclusion. The results showed a considerable increase in the production of mutton on the plots dressed with phosphates compared with the untreated plot. There were no outstanding differences between the gains from the various phosphates.

Nitrogenous Fertilisers. The experiments have been continued on the lines outlined in the two previous annual Reports. Field results over a period of four years will shortly be available, and it is hoped that the data will prove sufficient to afford a reliable indication of the value of the new forms of nitrogenous fertilisers.

The division has co-operated with the Seed Testing and Plant Diseases division in an investigation designed to ascertain to what extent the quality of grass seeds grown in Northern Ireland is influenced by manurial factors

Soils.—Since the inauguration of the division no attempt has been made to carry out anything in the nature of a soil survey of Northern Ireland. The view has been taken that the economic advantages to be obtained from such a survey cannot at present be utilised because of the lack of adequate agricultural data with which to interpret the results. The line followed has been to take samples of soil wherever a field manurial experiment has been laid down, and to carry out a laboratory examination of these soils. Gradually it is hoped to accumulate information about a large number of different soils whose behaviour under definite experimental conditions is known, and to acquire thereby the means of making the chemical examination of soils of more practical benefit. It was with this object that the rotation liming experiments, outlined in the previous Report, were started. So far only the results from the first crop in the rotation are available. They indicate, as was expected, that not all the soils which are sour or short of lime respond to applications of lime or of chalk, a result which clearly indicates the need for careful experiments before making any recommendation as to the desirability of a general return to the practice of liming.

During the past two years several cases of soil infertility have been investigated and have been definitely traced to excessive sourness of the soil. In each of these cases an application of lime has had a beneficial effect on the crop following the application, the benefit being still more marked in the second crop.

A start has been made to investigate the conditions which make it impossible for farmers over large areas of Fermanagh to obtain a " strike " of clover, whether of the wild white or other varieties. It has been established by the Seed Testing and Plant Disease division that the trouble is not due to disease, and the indications are that the difficulties are due to certain soil deficiencies.

Silage.—A third experiment designed to ascertain the feeding value of silage made from a mixture of beans, oats, vetches and peas was carried out at Ballywalter during the past year. Briefly the results confirm those already obtained, namely that 60 lb. of well made silage from the above mixture is capable of replacing 72 lb. of roots, 6 lb. of hay and straw, and 2 lb. of a cake and meal mixture in the ration of a dairy cow. During the past four years no difficulty has been experienced in growing a highly satisfactory crop. Although the turnip crop was a practical failure this season at Ballywalter, the silage crop averged about 16 tons to the statute acre. A trial with winter sown silage proved successful. The possibilities of silage as a winter feed for stock of all descriptions merits the close attention of farmers in Northern Ireland, particularly in those districts where soil or climatic conditions render the growth of turnips uncertain. A proper silage crop is quite as satisfactory a cleaning crop as roots, and although the initial capital cost of equipment is high it could be very materially reduced by co-operative methods. The information already available will be published at an early date.

Animal Nutrition.—A further series of experiments on the production of " baby " beef has been carried out. In the first experiment—1922-23—although the calves were all out of cross-bred cows most of them had been sired by a pedigree Aberdeen Angus bull. The object of the 1923-24 experiment was to explore the possibilities of producing " baby " beef from calves out of recorded cross-bred shorthorn cows and sired by a pedigree dairy shorthorn bull. The experimental lots were exhibited at the Royal Ulster Agricultural Society's Show at Balmoral in May, 1924, and were subsequently sold by public auction. The " baby " beef calves weighed at 13 months old approximately 7 cwt. each per head and fetched £25 per head. A further group bred in exactly the same way, but $16\frac{1}{2}$ months old, reached 9 cwt per head in the sale ring and realised £31 10s. 0d. each.

Friesian Shorthorn Experiment.—The experiment with pure-bred Friesian, half-bred Friesian and with shorthorn cattle outlined in last year's report was brought to a successful conclusion. The animals were all slaughtered in Belfast under the supervision of the staff of the division. For each of the 18 animals in the experiment a record has been obtained of the live weight gains, summer and winter, through the experimental period ; the weight of the various offals on slaughter ; the carcase weight, and the weights of the various wholesale joints. Photographic records were made of all the wholesale joints and dissections and photographs made of some of the retail joints. Although it is not possible in this brief statement to review the results in any detail, it may be of interest to mention one or two of the more obvious indications. There is a very marked difference in appearance between Friesian beef and shorthorn beef. The lean in the former is much redder in appearance, and this characteristic is almost as marked in the half-bred Friesian. Dissections of corresponding retail joints show that there is a higher proportion of fat in the shorthorn joints. In order to ascertain to what extent these differences were reflected in the quality of the cooked joint, a cooking test was carried out at one of the Belfast restaurants. Two sirloins selected by the butcher as the best Friesian sirloin and the best shorthorn sirloin, labelled A. and B. respectively, were delivered to the restaurant. The two joints were cooked in the same oven and were served to a number of customers, each cutomer receiving a slice from each joint, the slices being marked " A. and B." The customers were informed that the two slices of meat were from two distinct breeds of cattle, and were asked to state on the cards provided which slice they preferred, their reasons for the choice, etc. Seven cards were returned, and in every case a preference for " B " (shorthorn) was expressed. In two cases the preference was emphatic. The remaining five cases the customers were of opinion that both cuts were very good, but preferred " B." to " A." because of the relative hardness or stringiness of the latter.

Arrangements have been made to continue this work by investigating the possibility of producing "baby" beef from Friesian crosses. Three quarter-bred Friesian bull calves (by a half-bred Friesian bull out of shorthorn cows) and three shorthorn calves were purchased in July last when four months old. The calves, which had been castrated, have since been reared under identical conditions with the object of pushing them for "baby" beef.

Milk Testing.—The inauguration of a central scheme of milk testing in connection with the milk-recording movement has thrown a very considerable amount of extra work on the division. A special temporary milk testing laboratory has been equipped to deal with the samples as rapidly as possible. Between April 1st, when the scheme was inaugurated, and September 30th, 40,777 samples passed through the laboratory. In addition, 3,766 samples were received during the period October 1st, 1923, to September 30th, 1924, under the Ministry's scheme for the registration of pure-bred dairy cattle. At the start considerable difficulty was experienced in coping with the samples sufficiently rapidly, but since June last it has been possible to forward to every farmer a report on his milk samples within 24 hours of their receipt in the laboratory. Although the work is only beginning, it is hoped that the data collected will in the course of time afford valuable guidance to those engaged on the problem of developing the dairy cow.

Throughout the year the division has continued to co-operate with the Poultry Research division on the conduct of feeding experiments with chickens and laying pullets. Some very interesting results on the importance of minerals in the development of the young chick, and on the value of various types of protein for egg production have been obtained. This section of the work is dealt with in more detail on page 28.

General.—A large number of advisory inquiries have been answered during the past year, particularly concerning the feeding of various classes of stock.

Twelve lectures dealing with the work of the division were given to various branches of the Ulster Farmers' Union and to milk recording associations.

Two papers were read by the head of the division, one to the Agricultural Education Association at London on "Show Methods of Awarding Points in Milking Trials," and the other at Toronto on "Field Experiments with Rock Phosphates on Arable Soils" to the Agricultural Section of the British Association for the Advancement of Science.

The work of the division owes much to the ungrudging co-operation of, and the care exercised by, the county agricultural instructors in all the field trials.

Seed Testing and Plant Disease Division.

As was anticipated, the work of both sections of this division increased largely as compared with that of the previous season.

Seed Testing.

During the period 1st August, 1923, to July 31st, 1924, a total of 2,095 samples were tested (excluding experimental samples) as compared with 513 in the previous season. Of this total, farmers and farmers' co-operative societies submitted 182 samples; wholesale and retail seed merchants 1,607 samples; while 306 samples, including 156 official samples, were tested for officers of the Ministry. It is satisfactory to note that the number of farmers submitting samples to the station advanced by about 60 per cent. It is, however, very desirable that farmers should make a still more extended use of the facilities provided by the station. The majority of farmers' samples were again received from counties Londonderry, Down and Antrim.

Ryegrasses constituted about 70 per cent. of the routine samples tested; other grasses 7 per cent.; flax 10 per cent.; clovers 9 per cent., and cereals 2 per cent.; roots, vegetables and miscellaneous species making up the remainder.

The general quality of the samples examined was good and distinctly superior to that of the previous year's produce. Quality was maintained satisfactorily as the season advanced, but the ryegrass seed crop was short, and practically none was available at the end of the season.

During the period under review it was found that "Continental" tests were required more frequently than "Irish," and in the analytical table below the figures given for grasses represent a digest of "Continental" tests only. In testing clovers there is no difference between "Irish" and "Continental" systems. For the future the "Continental" system will be employed as the standard method for the station, upon all samples, unless the "Irish" system is specified by the sender. Under this arrangement the station will be in conformity with the official stations for England and Scotland.

Table.

Showing survey of results given by the principal species.

Species.	No.	Purity.				Germination		
		% Aver.	Injurious Weeds No. of Samples containing :—		No. of spls. containing Ergot	* Mode	Average	% Hard Seed
			Over 1%	Over 2%				
Per Ryegrass ...	544	96.6		157	52	88	86	
Italian ,, ...	265	97.0		60	14	86	86	
Mixed ,, ...	126	95.6		26	8	83	81	
Crested Dogstl.	11	98.1		8	18		68	
Red Clover ...	69	97.2	3				86	6
White Clover...	19	96.4	3				92	4
Wild White ,, ...	40	95.3	—				90	8
Alsike ,, ...	20	98.1	—				90	6
Flax	118	98.5				88	85	

The "Modal" figure is that which occurs most frequently in a series. Thus, in the case of perennial ryegrass, there were more samples showing a germination of 88 per cent. than any other figure.

It will be seen from the table that the " Continental " purity for ryegrasses was in the neighbourhood of 96.5 per cent., and that the purity of perennials and Italians, grown alone, averaged higher than that of mixtures. This is commonly the case. Those samples which were examined by the " Irish " method gave an average purity so close to the " Continental " figure quoted above as to be well within the normal latitude of experimental error. It will be noted that approximately 26 per cent. or one quarter of the samples of ryegrass tested, contained more than 2 per cent. of injurious weed seeds, while for all other species the number of samples containing injurious weeds in excess of the percentage specified for declaration under the Seeds Act was almost negligible. This is due to the relatively high weight of soft brome grass-seed, one of the commonest weeds in ryegrass samples. These figures demonstrate forcibly the necessity for growers to exert the utmost vigilance in keeping ryegrass crops clean. To this end, it is of the first importance that growers should sow nothing but the best and cleanest seed obtainable. Impure seed must inevitably lead to a weedy crop.

The proportion of dogstail samples containing grains of ergot was again high. Roughly 10 per cent. of perennials and about 8 per cent. of ryegrasses collectively, contained the fruit bodies of this fungus in sufficient quantity for one or more to appear in the small sample (less than $\frac{1}{4}$ oz.) used for purity determination.

The average and modal (most commonly occurring) germinations of the important grasses, it will be observed, were considerably higher than in the previous season. In perennials, for instance, the most common germination was a little less than 90 per cent., while in the previous season it was a little over 80 per cent.

The bulk of the clover samples received were reds and wild whites. The majority of the former were English. Samples containing more than the prescribed percentage of injurious weeds were very few, no cases occurring in the wild white clovers examined. The germination of wild white samples was noticeably good, the average number of manifestly dead seeds being only 2 per cent.

The average purity of the flax samples received from farmers and merchants was for all practical purposes up to the average of the previous season, the figures being 98.5 and 98.7 per cent. respectively. One sample was recorded as containing dodder. In germination, flaxes were not as good as in the previous season—the average germination of 85 per cent. and the modal value of of 88 per cent. compare with 87 and 92 per cent. for season 1922-1923—but a marked improvement is being shown in the new season now in progress.

International Seed Testing Association.—The Ministry was represented by the head of the division at the Fourth International

Seed Testing Congress, and he is participating in the formation of the International Seed Testing Association.

Experiments.—The great increase in routine work has left very little time available during the season for experimental work. Trials are, however, being continued, along the lines previously indicated, to elucidate the problems of harvesting and storing grass-seed under inclement conditions, and to investigate the possibilities of artificial drying.

Further field experiments have been laid down, in collaboration with the chemical reasearch division, with a view to ascertaining the effect on quality and quantity of ryegrass seed produced, and the rapidity of ripening under various manurial treatments. Results so far to hand indicate that very useful data may be obtained by a continuance of the trials.

Field experiments are also in hand, designed to ascertain the relative merits of wild white clovers from various countries of origin, and the effects of varying cultural treatments of wild white pastures.

Plant Diseases.—The season has been very wet and as would be expected, there has been no dearth of diseases of crop plants. The work during the year has been to a great extent of an advisory nature but it has been found possible to plan a number of experiments dealing with the more important problems at present confronting the agriculturist.

About 80 cases of disease have been investigated up to the date of writing this report, over 25 of which concerned potatoes, the remainder dealing with flax, fruit, cereals, root crops, forest trees, greenhouse crops and ornamental plants.

The conditions on the whole have been favourable for the development of potato diseases. Ordinary blight, although appearing early in one or two localities, was not generally widespread until later in the season and the attack has not been so intense as in 1923. This may be accounted for by the fact that despite the heavy rainfall which was characteristic of both seasons, the weather was considerably milder in the early summer of 1923 than in the corresponding period of the present season. A number of other potato diseases has also engaged the attention of the division.

During 1923 a series of 14 experiments were laid down, with the help of the agricultural instructors and potato supervisors, to investigate the various problems connected with the spraying of the potato crop against ordinary blight. Interesting results were obtained, and the scheme was widened in 1924 to include the whole of Northern Ireland. Some 30 experiments are now being carried out.

The two most serious diseases of flax, " seedling blight " and " browning " have been seen in the field ; but although " seedling

blight " was fairly widespread early in the season, " browning " has not been a serious trouble during the present year.

A fungus causing " seedling blight of flax " and believed to be " colletotrichum linicolum P. and L." has been isolated from diseased flax seedlings, and a large number of pot experiments have been carried out in this connection. The growth of the fungus on nutrient media in its various aspects is being studied.

With regard to the diseases of fruit, many cases have been received for identification and for information concerning the best methods of control. One of the most serious is the well-known " apple scab," and two experiments, one in county Armagh and the other in county Tyrone, are being carried out with a view to discovering the best methods for their control. The apple crop in general has been very poor this year, and results of importance are not expected, but it may be stated that the trees (Bramley's Seedling variety) which were sprayed in order to check the disease are in a much better condition than the control trees which were left unsprayed. The sprayed trees have retained their green foliage, while those which were not sprayed were almost leafless by the month of September.

The control of American gooseberry mildew by spraying is being investigated in co-operation with the horticultural instructors. Numerous sprays have been experimented with, in some cases over a period of three successive years, and it is hoped within a short time to be able to give definite information regarding the control of this disease.

The changing of the top soil in glasshouses every alternate year or so is a costly operation and involves a great deal of labour. In view of this, experiments have been laid down dealing with partial sterilisation of the soil by the application of various chemical compounds. Such a treatment is also extremely beneficial in ridding the soil of disease-causing organisms which, in certain seasons, give rise to serious outbreaks of diseases of glasshouse plants.

The division is co-operating with the principal forestry station at Baronscourt, with a view to designing experiments in connection with the identification and control of those diseases which are frequently the cause of great anxiety to the sylviculturist.

Plant Breeding Division.

The alteration of existing buildings and their equipment for use in plant breeding work have been satisfactorily completed and pure varieties of cereals in bulk can now be threshed, dried, cleaned, and stored without jeopardising their purity. A number of such bulks, the produce of extension plots, were so dealt with before their distribution in 1924.

Field work in 1924 was devoted almost entirely to oats, flax, and potatoes. Other crops represented in the testing grounds at Stormont were barley, beans, peas, and vetches, but these were kept principally for purposes of observation.

Oats.—The general purposes underlying all work on this crop are two : (1) the recognition of the existing varieties which most lend themselves to successful cultivation in Northern Ireland, and best fulfil the farmer's requirements ; (2) the creation or adoption of new varieties which offer advances, however slight, over the previous best. Assuming good husbandry, successful cultivation depends on the suitability of the variety for the prevalent climatic and soil conditions. It is hoped that, in time, well designed and recorded variety trials will reveal those soil and weather conditions which most favour any one variety or natural group of varieties. Under the climatic conditions which prevail in Northern Ireland, harvesting is often a late and difficult operation, and the earlier varieties have a better chance of being stored in good condition. Earliness of ripening is, therefore, an important consideration in the comparison of varieties on the basis of suitability for Northern Ireland, and in selection from hybrid progenies. Other qualities, to which attention is given during selection are tillering capacity and rapid growth, wherein lie the powers of recovery from, and resistance to, insect and grub attack. It is recognised also that in Northern Ireland there exists as a very general practice the cultivation of oats as a dual purpose crop, in that the straw is used for feeding farm stock. Some of the high yielding varieties that have been placed on the market possess straw which is not of good feeding value, and are thus rejected by many farmers. This requirement of the grower is borne in mind when selections, comparisons, and artificial cross-fertilisations are made.

Very many different, named and unnamed, varieties were grown at Stormont for observational purposes during 1924. The most promising of these will be tested later against a variety of known performance chosen as a standard.

Despite most unfavourable weather conditions a large number of the artificial cross-fertilisations made have proved successful. Most of these were made between a variety which possesses straw of very high quality, and various of the highest yielding varieties. The fine-strawed parent is also winter-hardy, but has grey-coloured grain, and the hybrid progenies will be studied with a view to the isolation of white-grained winter-hardy forms, and heavy yielding spring varieties possessing straw of good quality.

Selected cultures of several varieties, including Banner, Victory and Potato, have been raised and will be further increased in bulk until sufficient seed is available for distribution. As a result of this year's propagation several new varieties are available in quantities sufficiently large to allow of their being tested in 1925.

The produce of extension plots of Victory and Crown oats, grown in 1923, was distributed from Stormont to growers selected by the several agricultural instructors in the spring of 1924. At the same time arrangements were made for further and similar plots of these varieties, and of an additional variety, King.

Attention is being given to the special requirements of those farmers who have to contend with circumstances which impose limitations on their choice of a variety. This occurs where poor soil, indifferent cultivation, high winds, and short seasons all militate against the cultivation of oats.

According to available information, the local variety, Tyrone Tawny, is particularly well suited for the conditions mentioned. The name is applied to an aggregate of several forms which almost certainly differ in economic value. Selections from this aggregate have been made at Stormont, and these will be further observed and compared with special reference to earliness of ripening, non-shedding of grain, stiffness of straw, and yield of grain and straw. The selection which proves to be best will be propagated and, it is hoped, in time, distributed.

Flax.—20 pure line varieties of flax were grown at Stormont in 1924. Most of these compared favourably with the check plots laid down amongst them, which consisted of some of the older pure line varieties, and of commercial varieties. One pair of plots demonstrated perfectly the effect of selection on length of straw. The most promising varieties were noted for further trial. Large propagation plots, which included Pure Lines No. 6 and Danish No. 21 and " Hunter's Hybrid " (P.L. No. 2 X. P.L. No. 6.), were sown at the North West Agricultural School, Strabane. These were grown beside a plot of commercial Dutch, and all three were superior to the last named.

Potatoes.—A number of seedlings obtained by crossing Kerr's Pink and Majestic were grown at Stormont. These had been tested and found immune to wart disease, and certain of them had given some evidence of freedom from leaf roll, an immunity which, could it be secured, would be of enormous value to potato growers. In 1924, however, this apparant immunity did not persist, though the seedling varieties differed markedly in the degree of incidence of the disease. The best of these varieties will be tested further in 1925.

Barley.—The produce of a 1923 extension plot of Spratt-Archer was distributed in 1924 through the medium of the agricultural instructors to farmers in barley growing districts. Field work on barley during the year was limited to the maintenance of a small number of pure line varieties of proven merit.

Beans, Peas and Vetches.—Certain pure lines of these were maintained during the year. These were selected for use in forage mixtures, and await determination of their economic values relative to commercial strains. Any investigation on these crops will include a study of the degrees of winter-hardiness possessed by them, and it is hoped that forms peculiarly suitable for autumn-sown forage mixtures may be isolated from these stocks.

Animal Diseases Division.

This division was established in April, 1924, temporary accommodation being provided in the Plant Breeding Buildings at Stormont. The erection of laboratories was begun in September, and it is expected that these will function early in 1925. Provision has been made for the housing and isolation of all classes of diseased animals at the main laboratory, where they can be closely observed, their symptoms studied, and investigations made both during life and after death. As material collected from animals even a few hours after death may yield very misleading information it will be necessary to set up temporary field laboratories in affected areas for the investigation of certain diseases in which the illness is of short duration.

The work of the staff during the preliminary period now under review was largely concerned with the design and erection of buildings and their equipment.

During the months April to September, 1923, specimens were received for routine examination and research purposes. Reports on 100 specimens were communicated to the senders and, in the case of contagious disease, advisory letters were sent or personal visits paid. A number of direct enquiries were also dealt with in the absence of specimens. The diseases most commonly encountered amongst the enquiries and specimens included coccidiosis of poultry and cattle, contagious abortion, roup, gapes, braxy, liver rot, and worms in sheep.

During the late spring 93 wild birds were examined to ascertain if they can give rise to outbreaks of disease amongst poultry. Wild pigeons, rooks, sparrows, etc., are commonly affected with roup, coccidiosis and other diseases, but whether they can transmit them to domesticated birds is a matter for further investigation.

The primary work of this division is research, including laboratory and field experiments and the publication of results. Information regarding the practical needs of farmers will be collected and distributed and research work will be undertaken to elucidate any special problems which may arise. The results of research work carried out elsewhere will also be recorded and communicated to farmers if judged to be of value. A series of leaflets dealing with diseases of live stock is in course of preparation.

Research work relating to any particular disease will be undertaken with one or more of the following objects :—

(1) To identify the causal agent of the disease, if not already known.

(2) To ascertain how the causal agent enters the animal body, and if carried by an intermediate host.

(3) To obtain a laboratory product or devise tests which will indicate the animals which are affected.

(4) To identify symptoms which will enable veterinarians and farmers to recognise diseased animals.
(5) To obtain a laboratory product or other agent capable of preventing the disease in the field.
(6) To discover preventive methods.

Disease problems will also be closely examined with reference to non-specific means of control and eradication. Methods of feeding, housing and general management are important factors in outbreaks of disease, and advice on these matters will be available for farmers.

The division will co-operate with the chemical and animal nutrition division and with the poultry division in certain feeding and poultry experiments.

A paper on " The Prevention of Poultry Diseases " was read at the Eighth Annual Poultry Conference at the Harper-Adams Agricultural College in August, and another paper on " Bacillary White Diarrhoea " was read by the head of the division at the Second Annual Poultry Conference at the Midland Agricultural College. Both papers were subsequently published in the scientific and lay Press.

Poultry Division.

The work of the poultry division has progressed considerably since the publication of the first annual Report. This is shown by the increased number of pens of pullets included in the laying tests, and by the greatly increased number of letters and visits from poultry keepers desirous of advice.

Feeding Tests.—Since the most vital object of the poultry keeper is economic feeding for egg production, and since comparatively little is known of the best methods of attaining maximum production at the lowest cost, particular attention has been paid, in co-operation with the chemical and animal nutrition division, to the carrying out of feeding tests with (a) chickens and (b) the same birds after they have reached the laying stage.

The Chicken Feeding Tests begun in 1923 were continued in 1924, and it is proposed to carry them on until some definite conclusions can be reached.

There is reason to infer from the results of two years' experiments that the mineral content of the ration is of paramount importance in the proper development of the chicken.

Value of Different Proteins for Egg production.—The first experiment with laying pullets to determine the value of proteins from different sources was completed during the year.

The foods tested included dried yeast, dried milk, blood meal and fish meal. The most interesting result was that no increase in egg production was obtained from the use of dried yeast. This is in conformity with results of tests made by Dr. Orr at the Rowett Institute, Aberdeen.

Feeding of Minerals to Laying Pullets.—Tests were carried out with three lots of pullets taken from the 1922-23 chicken feeding experiments. The results so far obtained indicate the importance of the mineral content of the ration, very much better results being secured from the two lots to which minerals had been fed from birth than from the third lot which had from birth received an ordinary ration without the addition of minerals.

Further tests are now in progress. These tests will have to be continued over a period of years before it will be possible to draw definite conclusions.

Laying Tests.—The second of a series of laying tests was carried out at the farm adjoining Stormont Castle during the period of 48 weeks which ended on the 15th September, 1924. In the test for pullets 72 pens were provided. The number of applications, however, exceeded this number by 22, and consequently, in accordance with the rules governing the test, a ballot was taken with the result that the 72 pens were distributed among 59 applicants, no applicant being allowed to enter more than one pen in any one section. One of the pens, however, on arrival at Stormont, was found to contain a bird which was suffering from a contagious disease, and the pen had, in accordance with the rules, to be returned to the owner.

In the test for ducks provision was made for ten pens and ten entries were received and accepted.

The following table shows the number of pens (by counties) competing in the Ministry's tests; each pen consisted of six pullets; ducks of five ducks :—

County.	1922-3 (Pens of Pullets)	1923-24	
		Pens of Pullets	Pens of Ducks
Antrim	3	16	3
Armagh	9	12	1
Down	23	34	5
Fermanagh	1	2	—
Londonderry	3	2	—
Tyrone	6	5	1
Totals	45	71	10

Particulars of the results of the 1923-24 tests will be found at pages 35-40 of the appendices. A comprehensive report on the tests has been prepared, and will be issued in pamphlet form.

The following table shows the number of pullets penned, number of eggs laid, cost of food, return for eggs and gross profit over cost of food for the two years 1922-23, and 1923-24.

48weeks ended	No. of Pullets penned	No. of eggs Laid	Average No. of eggs per Bird	Average value of eggs per Bird	Cost of food per Bird	Average price of eggs per dozen	Gross return per Bird over cost of food
16th Sept. 1923	270	51,025	188.98	s. d. 32 6.9	s. d. 9 10	s. d. 2 0.8	s. d. 22 8.9
15th Sept. 1924	426	77,383	181.6	33 0.5	9 10.25	2 2	23 2.25

Interest in the laying tests continues to grow not only on the part of competitors but also on that of the general public. Visitors come from all parts of Northern Ireland to study on the spot the methods of feeding, housing and general management which have given such satisfactory results.

The effects of the tests are already being shown in the care now taken in the selection of male birds even for general farm flocks. There is a steadily increasing demand for the progeny of heavy layers that have been recorded in the laying trials, breeders now realising that sons of such hens only are likely to breed good layers.

As in the previous year the premier award in the test went to a pen of White Wyandottes owned by an egg station holder. A silver challenge cup presented by the Scientific Poultry Breeders' Association for the best winter yield was won by the same pen.

The individual championship of the test was also won by a White Wyandotte, thus placing the breed at the head of the list of competing breeds in Ireland for the 12th consecutive year.

While the egg production and stamina of the White Leghorns fell far short of that of the White Wyandottes, there is an improvement shown as compared with those entered in 1922-23 and, given the same care as is taken in breeding Wyandottes, there is no reason why the White Leghorn should not rival the Wyandotte in number of eggs laid.

Preparations have been made to hold a third test, commencing on the 15th October, 1924, and a copy of the conditions governing this test, which were drawn up after consultation with prominent poultry-breeders in Northern Ireland, is to be found at pages 30-34 of the appendices.

Lectures.—A new feature of the work of the division consisted in the giving of a limited number of evening lectures to branches of the Ulster Farmers' Union and other bodies interested in poultry culture. The lectures were illustrated by lantern views and were largely attended.

5. Special Experiments.

Horticultural.

(a) *Black Currant Mite.* The experiments designed to secure information on the suppression of this pest were continued. In addition to the sprays and dusts used last season some new spray fluids were tested. One of these has given promising results, but the test is as yet too short a time in progress to enable definite conclusions to be made regarding this or any of the other substances which have been applied.

(b) *Capsid Bug.* This experiment was continued during the year on the same lines as during 1923. Owing to the very small apple crop in the orchard where the experiment is being conducted the returns available are not conclusive, but a reduction in the number of insects on some of the treated plots was apparent.

(c) *Ovicidal Washes.* Three series of experiments were undertaken to test the efficacy of three brands of tar distillates as egg killing washes. These experiments were conducted in orchards situated in county Armagh, county Tyrone and county Antrim, respectively. Different strengths of each of the distillates were applied to apple trees on which the eggs of the apple sucker were prevalent. At certain strengths all three were found effective.

(d) *Manuring Apple Trees.* As the crop of fruit was very small the results of these experiments in the past season have been held over for further corroboration.

6. Marketing and Transit of Agricultural Produce.

The educational work undertaken by the Ministry in previous years with a view to stimulating producers and exporters to adopt efficient marketing methods in the case of eggs, butter, fruit and other agricultural commodities was further developed in the year under review. Arrangements were made for the delivery by county instructors, at meetings of branches of the Ulster Farmers' Union and of the Ulster Agricultural Organisation Society, of a considerable number of lectures dealing with the marketing of agricultural produce generally, and, in addition, special lectures on the subject were given by officers of the Ministry's staff, including the marketing representative in Great Britain.

The Ministry's marketing inspector in Northern Ireland visited the premises of egg shippers and afforded the fullest information as to proper methods of testing, grading and packing. The advice afforded through the medium of lectures and visits was supplemented by an extensive circulation of leaflets and posters setting forth in detail the improvements in marketing methods recommended by the Ministry. Special marketing exhibits were staged at the shows of the Royal Ulster Agricultural Society and

the North-West Agricultural Society, and at some of the county shows, such as that of the County Antrim Agricultural Association, marketing was one of the features dealt with in the general educational exhibit. At the summer show of the Royal Ulster Agricultural Society a class for cases of packed eggs was included. Each competitor was required to forward five cases of eggs to an agent in Manchester, by whom they were reconsigned to the show grounds at Balmoral.

The question of the grading and packing of poultry also received attention, and detailed instruction as to proper methods of killing, plucking, trussing and packing for consignment to cross-Channel markets was supplied to all exporters by the Ministry's marketing inspector.

Advantage was taken of every opportunity to emphasise the importance to the Northern Ireland agricultural industry of marketing produce on the lines indicated by the Ministry, and to point out that failure to do so would of necessity result in the market in Great Britain for Northern Ireland produce becoming more and more restricted. While, however, an improvement in the standard of marketing has taken place in certain directions, especially in the case of butter, the view of the Ministry, to which expression was given in its Report for 1922-23, as to the necessity for a compulsory system of inspection and control, has been fully confirmed by the experience of the year covered by the present Report.

The Ministry found it necessary to seek legislative powers in connection with the Northern Ireland egg trade to insure that a satisfactory standard of marketing would be maintained and, accordingly, the Marketing of Eggs Act (N.I.), 1924, was introduced into Parliament and passed into law in May of this year.

Full particulars regarding this Act, which will not become operative till the 1st January, 1925, will be found in the portion of the report dealing with Agricultural Laws.

Fruit.

Instruction in marketing methods was given to fruit growers by the county instructors in horticulture, special attention being directed to the necessity for careful grading and the advisability of using the standard box for packing apples recommended by the Ministry.

An Ulster section was included at the Imperial Fruit Show held at Manchester in October, 1923. The two classes in this section, for (a) 7 boxes of Bramley seedling and (b) 7 boxes of any other cooking variety, were confined to competitors from Northern Ireland. In both classes the apples were required to be packed in standard bushel boxes. The prizes in each class were provided by the Ministry. The entries for the section were fewer in number than in 1922 on account of the inclement weather

during the ripening season, but the sizing, grading, packing and general appearance of the apples were generally better than in the previous year.

Arrangements have again been made for the inclusion of classes for Northern Ireland apples at the Imperial Fruit Show to be held in October, 1924.

Bacon.

The Ministry found it necessary to take action in several matters affecting the bacon-curing industry, which constitutes such an important factor in the Northern Ireland export trade. Investigations carried out by the Ministry showed that pigs were being marketed by producers at excessive weights, and that as a result many Northern Ireland hams proved to be too large and and fat to suit the requirements of the British consumer. The attention of producers and curers was directed to the injury which was being caused to the pig industry by the practice of feeding pigs to a weight in excess of 12 to 14 stones; leaflets on the subject were extensively circulated and arrangements made for the delivery by county instructors of lectures dealing with the matter.

The Ministry has requested the county instructors to direct the attention of farmers generally, in the course of their lectures and visits, to the danger of producing tainted bacon through the misuse of fish meal and accordingly to advise farmers not to use this commodity for feeding to pigs, and also at the same time to warn them against the use of cod-liver oil or linseed cake meal or other unsuitable feeding stuff.

It was observed by the Ministry from reports appearing in the Press that a Lancashire grocer had alleged that Canadian and American bacon was being imported into Ireland and manufactured as Irish Roll bacon for consignment to Great Britain. This allegation was thoroughly investigated by the Ministry, and the complaint was found to be without foundation.

Transit.

Considerable attention was devoted by the Ministry to the question of securing improved conditions so far as the reasonable and expeditious transit of agricultural produce was concerned. In October, 1923, the Ministry brought to the notice of the carrying companies in Northern Ireland the following recommendation in regard to railway rates, which was included in the report of the Agricultural Aid Committee which sat in the previous July :—

> " We are, of course, aware of the recommendations made in their Interim Report, dated 29th March last, by the Imperial Agricultural Tribunal of investigation as to the urgency of an immediate reduction of not less than twenty-five per cent. in

railway rates on farm produce and farm supplies (e.g., fertilisers, feeding stuffs, seeds, machinery, etc.) and of their opinion that if such a reduction was not feasible on the part of the Railway Rates Tribunal the Government should take the financial responsibility for the reduction. We, however, do not favour anything in the nature of a State subsidy for this purpose. From the evidence placed before us on behalf of the railway and shipping companies it is clear that they are most sympathetic in regard to the revision of rates on agricultural produce, and while their financial commitments, particularly in regard to the cost of labour, make an appreciably downward revision a matter of extreme difficulty we consider that the carrying companies affected should take the earliest practicable opportunity of applying to agricultural traffic between stations in Northern Ireland and stations in other parts of the United Kingdom reductions corresponding to those which we understand were put in operation in Great Britain as from 1st May last. We hope that the companies will also, at an early date, be able to make like reductions for the traffic within Northern Ireland."

The carrying companies, in response to the Ministry's request, investigated very fully the possibility of effecting reductions in the charges for the conveyance of agricultural produce and farming requisities, but found that, notwithstanding their desire to promote the development of the agricultural industry, it was impracticable in view of the high level of working costs to make any further reductions in the existing rates

In this connection it may be observed that when the Irish railway companies were de-controlled by the Government in August, 1921, the North of Ireland railways reduced their rates generally from 120 per cent., plus certain flat rate additions to 100 per cent. net, and small parcels from 150 per cent. to 100 per cent. In addition substantial reductions were made in the case of certain traffics, such as feeding stuffs, potatoes, flour, meal, etc., very many of the rates being less than 50 per cent. over the pre-war figures. Last season, to facilitate the removal and sale of potatoes caused by the over-abundant supply a general reduction on potato rates to 50 per cent. over the pre-war figures was made.

Following the reduction made by the British railway companies, Northern railway companies succeeded, after negotiations, in having the through rates from interior Irish stations with cross-Channel stations correspondingly reduced, and, in addition, the Irish railway companies concerned have withdrawn certain amounts which had been added to these through rates in respect of cartage and transfer charges, despite the fact that the cost of these services has not been lessened in any appreciable degree to these companies.

The position in 1924 as compared with 1920 is as follows :

Percentage of increase over pre-war rate on :—

	1.9.20.	30.9.24
Tonnage Traffic	120	75
Smalls	150	75

As the result of representations made early in the year to the carrying companies regarding rates charged for cases and small parcels between Northern Ireland interior stations and the ports of Holyhead, Liverpool, Fleetwood and Heysham—these rates being on a comparatively higher scale than the rates between interior stations in Northern Ireland and interior stations in Great Britain—the rates to the ports mentioned were brought into line with the rates to stations in Great Britain.

Having in view the development of the seed potato trade, the Ministry communicated with the carrying companies in Northern Ireland as to the possibility of the introduction of specially reduced rates for seed potatoes which had been inspected by the Ministry and which were covered by a purity certificate, and following the Ministry's representations a special rate of 50 per cent. over the pre-war rate for consignments of not less than 2 tons was introduced between certain stations from which the bulk of traffic of this nature would emanate. The companies were, however, unable to grant a similar concession in the case of " ware " or " table " potatoes.

Representations made by the Ministry as to the desirability of revising the rates charged for traffic between certain centres were sympathetically considered by the railway companies concerned, who finally saw their way to fix reduced rates. The Ministry has also approached the railway and shipping companies in a number of cases where breakages occurred in transit or where a delay in delivery had taken place. In all such cases the circumstances received the fullest investigation from the companies concerned.

7. Agricultural Schemes.

(a) Poultry-keeping.
(b) Butter-making.
(c) Horticulture and Bee-keeping.
(d) Prizes for Cottages and Small Farms.
(e) Subsidies to Agricultural Shows.
(f) Horse-breeding.
(g) Cattle-breeding.
(h) Registration of Dairy Cattle.
(i) Milk Recording Associations.
(j) Location of Special Dairy Bulls.
(k) Swine-breeding.
(l) Sheep-breeding.
(m) Goat-breeding.
(n) Creameries.

The Ministry's first annual general Report contained full particulars of these schemes. For the period under review some slight revisions were made—these changes are enumerated in the copy of the circular letter which appears at page 29 of the appendices to this Report.

That the operations of the majority of these schemes come generally under the direct jurisdiction of the county committees of agriculture is a natural development of the Ministry's policy of according to these bodies as much freedom of action with regard to the working of local schemes as is compatible with efficiency. Where, however, it is not practicable to enlist the assistance of county committees the schemes are administered directly by the Ministry.

(a) *Scheme of Instruction in Poultry-keeping.*

Under the provisions of this scheme instructors in poultry-keeping are employed with a view to affording residents in each county who are interested in poultry-keeping expert advice and practical instruction in all matters bearing upon this subject. The instructors deliver lectures, give demonstrations, conduct classes in poultry-keeping, and report on any outbreak of disease, etc., which comes under their notice. Farms and poultry runs are visited and the egg distribution stations which are established in each county under the poultry stations scheme are inspected at regular intervals. The under-mentioned table illustrates the working of this scheme during the period under review :—

County	No. of Instructors	No. of Lectures	No. of Visits	No. of Courses of Instruction given	No. of daily classes in these courses.	No. of pupils on class attendance register
Antrim	1*	9	556†	1	15	18
Armagh	1*	5	685†	3	37	51
Down	2*	—	1,200†	6	87	105
Fermanagh	1	—	870	2	29	33
Londonderry	1	1	750	5	68	90
Tyrone	1	—	570	3	41	41
Totals	7	15	4,631	20	277	338

*Also employed under the scheme of instruction in butter-making.

†Inclusive of visits in connection with the scheme of instruction in butter-making.

The poultry stations scheme, which was in operation in every county, provides for payment of a limited number of premiums to persons selected by county committees to keep poultry stations. Each station in respect of which an application is received is inspected by the instructor in poultry-keeping, and the final selection rests with the county committee who, in making their

decisions, pay due regard to the needs of the various rural districts in the county. The scheme recognises three classes of stations, viz., hen and duck stations, goose stations and turkey stations. From the first two kinds of stations sittings of eggs of pure-bred hens, ducks and geese (Embden) are supplied to residents in the district at prices which are fixed by the county committees. In the case of hen and duck stations the maximum price charged is 2/6 per sitting of 12 eggs, and in the case of goose stations 3/- per sitting of 3 eggs. At a turkey station the service of turkey hens by approved pure-bred American Bronze turkey cocks may also be obtained, the usual fee being 1/- per service.

The number of stations and of sittings of eggs distributed, etc., in each county during the period under review were as follows :—

Poultry Stations.

County	No of egg distribution stations		Sittings of eggs d'tributed (12 eggs per sitt'g)	No of egg d'tribut'n stations (goose)	Sittings of eggs d'tributed (3 eggs per sitt'g)	No. of Turkey Stations	No. of Hens Mated
	Hens only	Hens and Ducks					
Antrim	14	14	3279	11	170	35	1194
Armagh	13	7	2738	8	105	29	1206
Down	22	17	3903	18	257	45	1285
Fermanagh	8	23	2780	15	237	30	876
Londonderry	11	12	2527	15	219	28	713
Tyrone	13	8	1944	20	288	44	1901
Totals	81	81	17171	87	1276	211	7175

The undermentioned table shows the number of sittings of eggs (by breeds) distributed from poultry stations in each county—duck stations are shown separately, but are not recognised for premium purposes unless combined with a hen station :—

Poultry Stations by Breeds.
Poultry Stations Scheme—1924.
Hen and Duck Stations.

Breed	Antrim		Armagh		Down		Fermanagh		Londonderry		Tyrone		Total	
	No. of Stations	No. of Sittings	No. of Stations	No. of Sittings	No. of Stations	No. of Sittings	No. of Stations	No. of Sittings	No. of Stations	No. of Sittings	No of Stations	No. of Sittings	No. of Stations	No. of Sittings
Wh. Wyan.	12	1368	10	1336	17	1707	13	929	5	442	14	1166	71	6948
Wh. Leghorn	6	614	5	681	9	942	9	749	6	616	3	285	38	3887
B.P. Rock	2	205	...	...	...	...	1	95	3	222	1	60	7	582
B. Orpington.	1	70	..	...	...	..	...	...	..	...	...	...	1	70
Br. Leghorn	1	63	...	..	2	113	1	59	...	...	...	...	4	235
Bl. Minorca	1	136	2	242	6	429	4	268	4	325	...	...	17	1400
Light Sussex	...	...	1	119	1	72	1	66	...	.	1	180	4	437
R.I. Red ...	5	515	2	188	4	356	1	91	5	646	2	119	19	1915
Ancona ...	...	...	....	...	...		1	137	...	...	...	...	1	137
Ind. Runner	14	308	7	172	15	210	23	386	11	219	7	119	77	1414
Aylesbury	...	...	....	...	2	74	...	...	1	57	1	15	4	146
Totals		3279	...	2738	...	3903	...	2780		2527	..	1944	...	17171

Totals for 1923 :— 2,518; 1,657; 2,822; 2,277; 2,217; 1,813; 13,304.

The amounts paid in premiums to persons holding stations under this scheme in 1924 were as follows :—

County	Hen and Duck Stations			Goose Stations			Turkey Stations		
	£	s.	d.	£	s.	d.	£	s.	d
Antrim	191	0	0	22	0	0	82	10	0
Armagh	140	0	0	15	13	4	72	10	0
Down	265	12	6	31	13	4	109	6	8
Fermanagh	213	15	0	30	0	0	75	0	0
Londonderry	138	0	0	28	2	2	70	0	0
Tyrone	126	0	0	39	3	4	110	0	0
Totals	£1,074	7	6	£166	12	2	£519	6	8
Totals for 1923	£902	14	6	£159	6	8	£471	0	0

Poultry Demonstration Farms.—Additional funds having been placed at the Ministry's disposal for the development of the poultry industry, arrangements were made with

1. Lt.-Col. F. S. N. Macrory, D.S.O., Ardmore, Limavady, Co. Londonderry;
2. Miss D. Robertson, Dogleap, Limavady, Co. Londonderry;
3. Mr. G. Downey, Skelly Hill, Helen's Bay, Co. Down;

whereby their farms should be utilized by the Ministry as poultry demonstration farms. These owners undertook to provide data which would show their annual expenditure and receipts as well as capital outlay, and the information thus obtained will be used by the Ministry for the benefit of those who intend to engage in the industry. The selected farms are open to official inspection and, on application to the Ministry, to visits by organised parties of visitors during the year.

(b) *Scheme of Instruction in Butter-making.*

This scheme provides for the employment of instructors to assist and advise the farmers womenfolk in home butter-making. The scheme was in operation in the counties of Antrim, Armagh, Down and Londonderry during the period under review. In addition to visiting home dairies and giving advice, the instructors conduct classes in butter-making at suitable centres and give demonstrations in the making of butter and cheese. The following table illustrates the work performed in connection with this scheme :—

County	No. of Instructor	No. of Lectures	No. of visits to private dairies	No. of courses of instruction given	No. of daily classes in these courses	No of pupils on attendance register
Antrim	1*	—	*†	—	—	—
Armagh	1*	2	*†	2	27	24
Down	2*	—	*†	2	26	23
Londonderry	1	—	611	9	159	97
Totals	5	2	—	13	212	144

*Also employed under the scheme of instruction in poultry-keeping.
†Included in number of visits paid in connection with scheme of instruction in poultry-keeping.

The Ministry's activities in regard to creameries are detailed at pages 54-57 of this Report.

(c) *Scheme of Instruction in Horticulture and Bee-keeping.*

The primary duties of instructors working under this scheme are to visit gardens and orchards and give practical demonstrations and advice relating to planting, pruning, grafting and spraying of fruit trees, cultivation of vegetables, etc.; to deliver lectures in horticultural subjects; to visit apiaries and to give instruction in the principles and practice of modern bee-keeping. Instructors also advise farmers, cottagers and others interested on any matters relating to horticulture or bee-keeping, and investigate all cases of disease among bees, plants, trees, etc. Demonstration plots stocked with varieties of fruits and vegetables are established at suitable sites with the object of encouraging development in this direction.

Particulars of the work performed by the instructors are given in the following table :—

County	No of instructors employed	No. of visits & demonstrations	No. of lectures delivered	Total attendance at lectures	No. of demonstration plots	No. of Vegetable plots
Antrim	2	1,708	6	334	17	36
Armagh	2	1,596	4	72	8	32
Down	2	1,639	16	180	7	25
Fermanagh	1	835	—	—	—	10
Londonderry	1	728	—	—	12	7
Tyrone	1	650	16	240	6	18
Totals	9	7,156	42	826	50	128

(d) *Prizes for Cottages and Small Farms.*

During the period under review this scheme was adopted by the counties of Antrim, Down and Fermanagh—the judge in each instance being an agricultural instructor from an adjoining county.

Particulars of the operations of this scheme in each of the three counties named are shown in the following table :—

County	Number of Entries					No. of Prizes awarded in each class					Total amount expended in prizes
	Class I. Cottages	Class II. Small farms under £10 valuation	Class 3. Small farms between £10 and £25 valuation	Class IV. Ex-servicemen	Class V. Championship	Class I.	Class II.	Class III.	Class IV.	Class V	
Antrim	81	...	...	19	9	36	...	...	6	4	£63
Down	60	...	...	...	...	24	..	...	.	...	£56
Fermanagh	15	13	19	...	...	5	10	9	...	...	£83

The competitors for prizes under this scheme must be occupiers either of cottages or of small holdings, and in making their awards the judges take into account the following points :—

(1) Cottage Section—cleanliness of cottage; cultivation of garden; arrangement of manure heap; general management and care of live stock and management of bees.

(2) Small Farm Section—cleanliness of dwelling and poultry houses; judicious cropping and ultilization of manure; condition of grass lands, fences, water-courses, etc.; management and care of live stock; cultivation of garden, keeping of accounts, milk records, etc., and tree planting.

(e) *Subsidies to Agricultural Shows.*

Subject to conditions specified in this scheme, county committees are empowered to grant subsidies to societies established for the purpose of holding agricultural, poultry and horticultural, and farm produce shows; industrial shows or exhibitions; skilled labour competitions; implement trials; ploughing matches, etc.

During the year under review grants were made as follows by county committees :—

County	Amount allocated by County Committee	Number and value of subsidies estimated to be paid in respect of:			
		Agricultural Shows		Skilled labour competitions (ploughing matches, &c.)	
	£	Number.	Value. £	Number.	Value. £ s
Antrim	290	6	275	2	10 0
Armagh	111	3	75	3	17 5
Down	370	9	370	—	—
Fermanagh	70	3	70	—	—
Londonderry	115	4	90	4	25 0
Tyrone	250	6	239	2	11 0
Totals	£1,206	31	£1,119	11	£63 5

The Ministry also assisted the following societies by making special contributions to their funds as follows :—

Royal Ulster Agricultural Society	£306
North-West Agricultural Society	100
Ulster Horticultural Society	12
Jersey Cattle Society of Ulster	30
Co. Armagh Agricultural Society (for fruit show)	30
Imperial Fruit Show (for prizes for classes confined to exhibitors from Northern Ireland)	22
Ulster Goat Society	50

(f) *Horse Breeding Scheme, 1924.*

This scheme (details of which will be found on pages 50-52 of the appendices to this Report) which was in operation in every county in Northern Ireland except Armagh, aims at encouraging

improvement in the horse-breeding industry of Northern Ireland by means of the provision of premiums for stallions of definite merit, and of the introduction of high class sires into districts where the need for such animals exists.

As a result of the general inspection of stallions for licences under the Horse Breeding Act, 1918, which is carried out annually in October, the owners of those sires regarded as *prima facie* suitable for premiums, are invited to show their animals at a central exhibition, which is held in the following February in the grounds of the Royal Ulster Agricultural Society at Balmoral. Two classes are provided at the exhibition, one for thoroughbreds and the other for clydesdales, and the stallions in each class are placed in order of merit for each county. The actual selection for the award of premiums rests with the several county committees, who pay the amount of the premium at the end of the season provided that the stallion has served 20 mares in the case of thoroughbreds or 30 mares in the case of any other breed at such reasonable fees as may be fixed by the county committee.

At the exhibition held in February, 1924, prizes to the total value of £100 were awarded for the seven best stallions of each breed, the number competing for these prizes and for premiums being 13 thoroughbreds and 23 clydesdales. All of these sires were regarded as up to the required standard, and, with the exception of one thoroughbred and two clydesdales, were selected by county committees for the award of premiums. One thoroughbred stallion which was unable to attend the exhibition, two clydesdale stallions, which were imported from Scotland subsequent to the exhibition, and an Irish draught stallion imported from the Irish Free State were also selected for the provisional award of premiums. As in the previous year arrangements were made whereby the railway companies having termini in Belfast carried the stallions attending the exhibition free of charge in one direction, the Ministry defraying the cost of carriage in the other direction.

A register was published giving particulars of the 37 premium stallions located in the several counties during the year.

The following table shows the amounts allocated and expended by the several county committees, together with the distribution of premiums in the various counties :—

County	Amount allocated by county committee	Amount expended by county committee	Number of premiums paid by county committee in respect of			Total
			Thoroughbred stallions	Clydesdale stallions	Irish draught stallions	
	£	£				
Antrim	440	318	3	7	—	10
Down	552	552	5½	5	—	10½
Fermanagh	140	140	1	2	—	3
Londonderry	260	255	1	5	—	6
Tyrone	300	270	2	4	1	7
	1692	1535	*12½	23	1	*36½

*In certain instances where thoroughbred premium stallions travelled for service in two counties the premiums were paid jointly by the committees concerned. Thus one thoroughbred stallion premium was paid partly by Antrim county committee and partly by Down county committee; another thoroughbred stallion premium was paid jointly by Antrim county committee and by Derry county committee. In a third case of a thoroughbred stallion a partial premium only was awarded and paid by Derry county committee. This explains the half premiums in the table above.

The maximum value of a premium fixed in the scheme for thoroughbred stallions was £70, and for any other breed £45. The values of premiums adopted by each county committee in 1924 are as follows :—

County	Breeds of Stallions		
	Thoroughbred	Clydesdale	Irish draught
	£	£	£
Antrim	65	35	—
Down	60	40	—
Fermanagh	60	40	—
Londonderry	60	40	—
Tyrone	55	35	35

The Tyrone county committee made a regulation that the services of those mares only which were the property of farmers whose poor-law valuation did not exceed £100, should count towards the earning of a premium. In the case of county Londonderry the mare owner was required to hand to the stallion owner a veterinary surgeon's certificate that the mare was sound before service. No other special regulations were made by county committees.

The number of mares served by premium stallions under this scheme during the 1924 season was as follows :—

County	Mares served by thoroughbred stallions	Mares served by clydesdale stallions	Mares served by Irish draught stallions
Antrim	133	136	—
Down	271	150	—
Fermanagh	38	82	—
Londonderry	20	149	—
Tyrone	42	113	31

Subsidies were granted by the Ministry towards the purchase of eight stallions for service in districts where suitable sires were in demand. Loans were also made to the purchasers of these sires, who were required to undertake to keep the animals for five years in the districts in which they were located. Four thoroughbreds, one clydesdale, one Irish draught, and two Welsh cobs were purchased and placed under these arrangements.

(g) *Cattle-Breeding.*

Success or failure in dairying depends largely upon the stock kept for breeding purposes, and improvement can be effected only by testing and selecting the best milkers and mating them with sires of a high degree of excellence. This scheme provides for the payment of premiums to farmers who undertake to keep bulls which have been passed by the Ministry's inspectors at approved spring shows and sales as up to a suitable standard for service. In this way good bulls are placed within reach of small farmers who can utilize them for their cows at a small service fee. At the end of each season the bulls are inspected locally with a view to the award of continuation premiums—the animals are usually awarded premiums for three successive seasons. The amount of the premium varies in accordance with the breed of bull purchased. In 1924 the maximum premium for a pure-bred registered dairy bull, if the dam and sire were both entered in the Ministry's register of dairy cattle, was £20, and if the dam only was entered in the register, £17; for a pure-bred shorthorn, Aberdeen Angus or Hereford bull, £15, and for a registered dairy bull (other than pure-bred) or a Galloway bull, £13. The minimum premium for a bull of any breed approved under the scheme was £10.

It is gratifying to note that there appears to be amongst farmers a growing appreciation of the value of dairy bulls and the demand for bulls with dairy records on both sides is rapidly increasing.

The following table shows the regulations in force in each county during 1924 with regard to the services and fees in respect of premium bulls :—

Premium bulls 1924—Services and fees.

County	Service Fees	Services		Valuation of holdings of Cow owners
		Yearling Bulls Minimum No.	Older Bulls Minimum No.	
Antrim	2/6 in all cases	30	40	not limited
Armagh	5/- in all cases	30	40	not limited
Down	2/6 where valuation does not exceed £30 5/- where valuation exceeds £30 but does not exceed £100	30	40	not to exceed £100
Fermanagh	2/6 where valuation does not exceed £25 4/- where valuation exceeds £25 but does not exceed £100	30	40	not to exceed £100
Londonderry	4/- in all cases	30	40	not limited
Tyrone	3/6 in all cases	30	40	not to exceed £100

The average price of a premium bull was 39 guineas in 1922, 41 guineas in 1923, and 51 guineas in 1924. In the year covered by the Report approximately 11,170 cows were served under the regulations of the scheme.

The amounts allocated by county committees for premiums to bulls and the estimated expenditure in each county are given in the following statement :—

County	Money allocated	Estimated expenditure	Total number of bulls standing for premiums in county
Antrim	£1,200	£1,019	64
Armagh	640	528	36
Down	1,400	1,399	89
Fermanagh	504	504	32
Londonderry	540	509	31
Tyrone	1,150	1,100	69
Totals	£5,434	£5,059	321

The following table shows the breeds of bulls selected for and awarded premiums under the scheme in 1924 :—

County	Pure-bred registered dairy		Cross-bred registered dairy	Short-horn	Aberdeen Angus	Galloway	Total
	Dam and sire registered	Dam only registered					
Antrim	7	16	4	32	—	5	64
Armagh	2	3	4	26	1	—	36
Down	5	13	1	60	10	—	89
Fermanagh	1	8	—	20	3	—	32
Londonderry	4	12	—	14	1	—	31
Tyrone	5	15	—	42	7	—	69
Totals	24	67	9	194	22	5	321

The distribution of premium bulls in 1924 was as follows :—

County	Number of bulls retained for service from 1923	Number of bulls provisionally awarded premiums for the first time in 1924	Total number of bulls approved for premiums in 1924
Antrim	34	30	64
Armagh	11	25	36
Down	37	52	89
Fermanagh	17	15	32
Londonderry	18	13	31
Tyrone	37	32	69
Totals	154	167	321

The selection of bulls to hold premiums for the first time takes place at two selected centres only, viz., the spring sale held annually at Balmoral under the auspices of the Royal Ulster Agricultural Society and the spring sale held annually at Londonderry under the auspices of the North-West of Ireland Agricultural Society. The inspection of bulls with a view to determining their suitability for second, third, or fourth year premiums is carried out each winter at local centres determined by the Ministry.

(h) *Registration of Dairy Cattle.*

The majority of farmers now realise that the milk recorded cow and her progeny have a recognized value in the open market. The aim of this scheme is to encourage breeders to keep reliable milk records and to mate their best milkers with high class dairy bulls, and by these means to endeavour to raise the general

standard of the dairy cattle throughout the country. Farmers are induced and assisted to keep proper records of the milk yields of cows in their herds as such records are the basis of economical milk production. Milk records enable owners to eliminate the poor producers, to know which cows or heifers are worth retaining, to ascertain whether a bull is breeding good milkers, and, lastly, to gain some knowledge as to the quantity and composition of the ration required for the maintenance of each animal. Among an increased number of farmers there is a growing appreciation of the benefits to be derived from participation in this scheme, and it is gratifying to be able to record that during the period under review more applications were received for inspections of cows with a view to their provisional selection for registration than in any other year since the Ministry commenced to function. As a result of inspections carried out during the period 256 cows, including 162 pure-bred shorthorn, 8 cross-bred shorthorn, 18 Jersey, 20 British Friesian, 5 Ayrshire, 36 Kerry and 7 Red Poll were provisionally selected for registration.

Since the Ministry came into existence until the end of the period with which this Report deals, a total of 1,232 cows, including 173 pure-bred shorthorn, 26 British Friesian, 4 Ayrshire, 4 Kerry, 8 Jersey and 1,017 cross-bred shorthorn, had reached the standard prescribed by the Ministry for general appearance and quantity and quality of milk yield and were duly registered. Of this number 56 pure-bred shorthorn, 5 British Friesian, 2 Ayrshire, 3 Kerry, 3 Jersey and 438 cross-bred shorthorn cows were entered in the Ministry's register during the past year.

The milk yields upon which the above-mentioned animals were accepted for registration are given in the following tables :—

Table 1.—Showing yields of pure-bred cows registered by the Ministry from 1st October, 1923, to 30th September, 1924.

Breed	Number of Pure-bred cows registered on a yield of				Total No. of cows registered
	Gallons 400-600	Gallons 600-800	Gallons 800-1000	Gallons 1000 & over	
Shorthorn	—	37	15	4	56
British Friesian	—	—	4	1	5
Ayrshire	—	2	—	—	2
Kerry	3	—	—	—	3
Jersey	—	1	2	—	3
Totals	3	40	21	5	69

In addition to qualifying for registration in respect of milk yield, butter fat, etc., it is now stipulated in the scheme that a cow must produce a calf (after a normal period of gestation) within 14 calendar months of the date of calving immediately preceding the milking period for which the record has been kept. Consequently

a considerable number of cows which have given the requisite milk yield, etc., are not included in the above table, as they cannot be finally registered until their next calves are produced.

Table II.—Showing yields of cross-bred cows of shorthorn type registered by the Ministry from 1st October, 1923, to 30th September, 1924.

Number of cows registered on a yield of			Total number of cows registered
Gallons 600-800	Gallons 800-1000	Gallons 1000 and over	
321	88	29	438

The standards for registration are shown in the following table :—

Breed	Ordinary Register			Advanced Register		
	Milk Yield lb.	Butter-Fat lb.	Percentage of Butter-Fat	Milk Yield lb.	Butter-Fat lb.	Percentage of Butter-Fat
Shorthorn, Ayrshire or Red Poll	6,000	210	3	8,000	280	3
British Friesian	8,000	280	3	10,000	350	3
Kerry or Jersey	5,000	175	3	7,000	245	3

During the year 104 bulls, the progeny of registered shorthorn cows, were inspected and 87 were provisionally selected for premiums under the general cattle-breeding scheme. Of this number 23 are pure-bred animals, the dams and sires of which are entered in the Ministry's register of dairy cattle ; 47 are pure-bred animals, the dams only of which are entered in the register, and 17 are cross-bred animals with approved milk records on one or both sides. In addition to the above-mentioned 87 bulls, 11 bulls, the progeny of pure-bred shorthorn cows, were inspected at owners' residences and passed as suitable for the service of provisionally selected and pure-bred shorthorn cows and particulars of these animals were duly entered in the register as registered dairy bulls. During this period particulars were also entered in the register of 22 bulls with exceptionally deep milking ancestry. Fourteen of these animals were British Friesian, 5 Jersey, 1 Ayrshire and 2 Kerry. The majority of these bulls were valuable animals having been purchased in Great Britain and elsewhere and imported into Northern Ireland.

Over 2,400 samples were taken and analysed by the Ministry for the purpose of ascertaining butter-fat percentages in the milk yielded by cows under test with a view to registration.

During the year the Ministry published a register which contained particulars of pure-bred dairy cattle entered in the Ministry's register up to the 31st December, 1923. Copies of this register can be procured from any bookseller or direct from H.M. Stationery Office, 15, Donegall Square West, Belfast, price 5/- net. In addition to supplying particulars of the milk yields of registered cows of the various breeds, a list of registered dairy bulls is given with the detailed pedigree of each bull. The publication was issued by the Ministry in the hope that it would stimulate owners of dairy cattle to test their cows, that it would encourage them to retain their best milkers for breeding purposes and to dispose of those which were unremunerative.

(i) *Milk Recording Associations.*

The increase in the interest which has been taken in this branch of the Ministry's operations during the past year shows that farmers in the six counties are coming to recognise the vast importance of milk recording as a means of increasing the value of their dairy herds.

The main advantages that attend milk recording have already been mentioned in that part of the Report which relates to the Ministry's activities in connection with the registration of dairy cattle. It might be said in addition, however, that in general the systematic keeping of milk records puts farming on a business footing, and enables the farmer to adjust costs to results.

Towards the close of the year 1923 a special grant of approximately £29,000 was placed at the Ministry's disposal by the Northern Government for expenditure in connection with the development of milk recording work. The provision of these funds has enabled the Ministry to secure the establishment of associations in districts where, under ordinary circumstances, this would not have been possible, and also to introduce a number of new features of a beneficial nature into the scheme.

Heretofore considerable difficulty has been experienced in securing the prescribed minimum number of cows, viz., 200, which was necessary for the establishment of an association and, with a view to overcoming this difficulty, the Ministry decided to reduce the minimum number of cows required to render an association eligible for recognition from 200 to 150, and, as a further stimulus, to make a direct contribution of £40 towards the salary of each supervisor, provided that his work was carried out satisfactorily. County committees of agriculture are also empowered to make grants to associations towards the cost of equipment, etc., the following amounts having been allocated for this purpose :—county Antrim, £120; county Armagh, £75; county Down, £120; county Fermanagh, £110; county Londonderry, £70; county Tyrone, £125.

To stimulate further interest among cow owners the Ministry decided to make a grant of £10 to each association to be expended in prizes offered at local exhibitions. The competition for these prizes is confined to registered cows owned by members of the association. The prizes will be awarded on points given under the following heads :—(a) milk record, (b) butter-fat percentage, (c) shape and formation of udder and teats, and, (d) size, symmetry and general appearance.

In addition the following prizes will be awarded to the association with the best records during the year 1924 :—

I.	Confined to associations established prior to 1924.	First prize £20. Second ,, £15.
II.	Confined to associations established in 1924.	First ,, £10. Second ,, £5.

In making these awards special attention will be paid to (a) the number of cows under test, (b) the records of milk and butter-fat yield and (c) the manner in which the work of the association has been carried out. At least one third of the amount of the prize paid to a successful association must be paid by the association to its supervisor.

In order to enable supervisors to pay more attention to the work of visiting the members, giving advice on the feeding of their herds, etc., the Ministry arranged early in 1924 that all milk samples should be tested centrally at the Ministry's Chemical Research Division, Queen's University, Belfast, instead of by the supervisors themselves, as had been the practice previously.

Effect was given to this arrangement, and particulars as to the results of samples tested were furnished to the supervisors and members concerned.

During the year nineteen new associations were established, viz., seven in county Antrim, four in county Armagh, three in county Londonderry, three in county Fermanagh, and two in county Tyrone. Two associations lapsed during the year, viz., one in county Down owing to lack of support, and one in county Armagh, the members of the latter being absorbed in the four new associations in that county.

The remarkable development which has taken place during the last four years in milk recording work is illustrated in the following table :—

County	Number of Milk Recording Associations				Number of Members				Number of Cows under Test			
	1921	1922	1923	1924	1921	1922	1923	1924	1921	1922	1923	1924
Antrim	1	4	4	11	43	156	168	394	245	1052	1074	2458
Armagh	1	1	1	4	14	47	133	167	112	192	506	747
Down	...	...	3	2	...	...	115	68	...	...	544	440
Ferma'gh	1	4	3	6	15	117	94	169	133	931	698	1119
Lon'derry	...	...	1	4		...	58	168	...	...	306	922
Tyrone	3	4	5	7	127	121	176	198	754	934	1210	1417
Totals	6	13	17	34	199	441	744	1164	1244	3109	4338	7103

A short course for the training of supervisors was held in Belfast in February-March, at which twenty-eight supervisors attended. At this course, in addition to the usual instruction in the routine work of a supervisor, lectures were given on such subjects as "Breeding in relation to Milk Production," "Care of the Dairy Bull," "Relation of Feeding to Milk Production," etc.

In order to encourage the formation of associations and to emphasize the importance of milk recording, the Ministry's inspectors attended meetings of farmers and gave addresses on the subject. Periodical visits were also made to all established associations during the year for the purpose of checking the work of the supervisors and of giving advice.

A total of 427 cows which had been tested through milk recording associations in 1923 reached the required standard in respect of appearance, milk yield, and butter-fat percentage and, having calved within the prescribed period of 14 months from the date of calving immediately preceding the lactation period for which records had been kept, were entered in the Ministry's register of non-pedigree dairy cows.

In order to assist associations to obtain suitable bulls for the use of their members, the Ministry decided to grant a subsidy, equivalent to two-thirds of the cost price of the bull, to each association which procured an approved dairy shorthorn bull with high milk records on both sire and dam's sides. Twenty associations took advantage of this arrangement and in all cases the bulls have proved satisfactory and have been appreciated by the members. The price paid for these bulls varied from 47 guineas to 125 guineas, the average price being about 72 guineas.

Several members of milk recording associations are engaged in grading up their non-pedigree cows for ultimate entry in Coates's Herd Book. To encourage these breeders the Ministry arranged with the Shorthorn Society of Great Britain and Ireland that, instead of the foundation dams being inspected by an officer of this society, the animals would be inspected by an inspector of the Ministry and his report accepted by the society for the purposes of this scheme. By this arrangement the Shorthorn Society are relieved of the trouble and expense of sending a special inspector to inspect foundation dams, and it is also more convenient for the breeder concerned for this inspection to take place when his cows are being inspected by the Ministry under the milk recording scheme. At the Ministry's request the Dairy Shorthorn (Coates's Herd Book) Association also agreed to the adoption of a similar arrangement in connection with their grading-up scheme and, further, intimated their willingness to accept the records of shorthorn cows entered in the Ministry's advanced and ordinary

registers for the purposes of rendering the male progeny of such cows eligible for entry in the Dairy Shorthorn Association's Year Book.

(j) *Location of Special Dairy Bulls.*

The use of inferior bulls tends to nullify the results of the Ministry's milk recording schemes, hence the use of good bulls is essential if the standard of herds is to be improved. In order to assist breeders in the improvement of their stock two high-class pure-bred registered dairy bulls were leased by the Ministry at £10 per year to reliable breeders of pure-bred dairy shorthorns. These bulls were, of course, additional to the 20 dairy bulls procured by milk recording associations in respect of which the Ministry contributed two-thirds of the purchase price. In accordance with the terms of the agreement these special bulls are reserved for the service of pure-bred shorthorn cows only the property of the lessee and neighbouring breeders, and the service fee usually charged is one guinea.

(k) *Swine-Breeding.*

This scheme is on similar lines to the cattle-breeding scheme, and was in operation in every county. County committees of agriculture are empowered to grant premiums to owners of pedigree boars of the Large White Ulster and Large White York breeds, the boars, in the first instance, having been passed by the Ministry as up to premium standard. The animals stand for service at a fee varying from 2/6 to 5/-, and when from 30 to 40 sows have been served premiums are paid to the owners. At the end of the first season boars are inspected with a view to determining their suitability for premium purposes for a second year, and, if passed by the inspector, second year premiums are awarded on the same conditions. In 1924 the several county committees awarded premiums for boars as follows :—

County	1st Year Boars		2nd Year Boars		Breeds		Total No. of Boar awarded premiums
	Value of Premiums	No. of Boars	Value of Premiums	No. of Boars	Large White Ulster	Large White York	
Antrim	£8	11	£6	10	21	—	21
Armagh	8	5	6	4	9	—	9
Down	8	13	6	5	17	1	18
Fermanagh	8	7	6	6	10	3	13
Londonderry	8	11	6	3	14	—	14
Tyrone	8	12	6	12	24	—	24
Totals	—	59	—	40	95	4	99

The operations of the scheme during the period are summarized below :—

County	Money allocated by County Committee for boar premiums	Estimated expenditure by County Committee for boar premiums	Total No. of Premium boars standing during service service
Antrim	£176	£148	21
Armagh	100	64	9
Down	150	134	18
Fermanagh	*90	*92	13
Londonderry	120	106	14
Tyrone	170	168	24
Totals	£806	£712	99

* It is anticipated that the slight excess of expenditure over amount allocated will be met from savings on other live stock schemes. Approximately 3,370 sows were served under the regulations of the scheme in the period covered by the Report.

(I) *Sheep-breeding.*

This scheme was in operation in five counties, viz., Antrim, Armagh, Down, Londonderry and Tyrone, during the period under review, and particulars of the numbers of rams located and the expenditure incurred are summarized in the following table :—

	1923.			
County.	No. of Rams Located	Average Cost of Ram	Reduced Price to Applicant.	Total net amount expended by County Committee
Antrim	9	£8 0 0	£3 10 0	£40 10 0
Armagh	4	8 0 0	3 10 0	18 0 0
Down	9	8 0 0	3 0 0	45 0 0
Fermanagh	—	—	—	—
Londonderry	10	8 0 0	3 10 0	45 0 0
Tyrone	6	8 0 0	4 0 0	24 0 0
Totals	38	—	—	£172 10 0

The procedure adopted regarding the supply of rams is as follows :—

The Ministry selects rams bred by prominent breeders, and these rams are purchased by county committees who sell them at reduced prices to selected applicants in mountain districts. Each applicant is required to keep the ram for at least two years in good and healthy breeding condition, and at the end of that period the ram is as a rule sold to a breeder in another district, so that the animal remains in use for three or four years.

With regard to the placing of the rams effort is made to ensure that they will not be located in widely separated districts, as experience has proved that the best results are obtained when the

animals are concentrated each year in a particular area. Where possible, it is also required that selected applicants should dispose of all other unsuitable rams in their flocks. For example, a selected applicant with only five rams might be supplied with three rams by the county committee on condition that he purchases two additional rams of good quality. In 1922 only two counties participated in this scheme, so it is apparent that an increased interest is being evinced in this sphere of the Ministry's activities.

It is anticipated that with the additional funds which the Ministry has secured from the Northern Government for expenditure in connection with the improvement of mountain sheep it will be possible to arrange for the placing of from 80-90 black-faced rams in mountainous areas in Northern Ireland in the autumn of 1924.

(m) *Goat-breeding.*

Goats are of value to cottagers and small holders, and with a view to encouraging the keeping of goats the Ministry co-operates with the Ulster Goat Society and as far as possible assists it in its work. The society aims mainly at encouraging the formation of local societies in rural districts of those interested in goat-keeping, and at providing pedigree male goats at reduced prices to goat-breeders.

The Ministry has established a register for goats, the registration standard for milk yield being fixed at 900 lb. During the period under review particulars of the milk yields of eight goats were received from the Secretary of the Ulster Goat Society, and seven of these animals were accepted for registration and particulars entered in the register. The Ministry also arranges for the milk record sheets kept by owners who are testing their goats to be checked at suitable intervals by its officers.

(n) *Creameries.*

The scheme in force for the improvement of the quality and marketing of dairy produce in connection with creameries and cheese factories was carried out on the same lines as in 1923.

Forty central creameries and seventy-five separating stations are on the list for visits by the Ministry's inspectors, and the total number of visits paid during the year was 156 to central creameries and 78 to separating stations. When visiting a creamery the inspector examines the buildings, machinery and plant, and in addition to suggesting improvements in these directions advises the creamery proprietor and manager on matters relating to the cost of production and general business methods.

Arrangements are being made by the Ministry to have carried out at Omagh creamery certain experiments with a view to determining the best means of producing butter of a uniform quality

from cream supplied to a central creamery by a number of auxiliaries. Omagh creamery was selected for this experiment on account of the large quantity of cream supplied to this centre by auxiliaries. The Ministry anticipates that the results of these investigations will provide information of the greatest importance to the dairying industry in Northern Ireland.

Surprise Butter Inspections.—The system of surprise butter inspections was continued during the year, the inspections being held regularly every month. In the case of each inspection the samples are called up by telegram on a certain day upon which it is known that all the creameries are churning, and as the sample has to be despatched to the inspection centre on that day the element of " surprise " is secured, and the samples inspected may, therefore, be regarded as fairly representative of the butter which is ordinarily produced at the creameries.

During the winter months the samples asked for consist of two 1 lb. rolls, but in the summer months 56 lb. boxes of butter are required.

Subsequent to each inspection the samples are analysed for moisture content, as no sample can be regarded as " premium " or " standard " if it is found to contain moisture in excess of the legal limit (16 %). In this connection it is gratifying to note that out of a total of 327 samples analysed only 6 were found to contain excessive moisture. In these exceptional cases it is usual for the Ministry's inspector to pay a special visit to the creamery with a view to having the defect in the production of the butter immediately remedied.

The scale of marks adopted as the basis for judging and classifying the butter sent to these inspections is as follows :—

		Flavour	Texture	Marketable appearance, packing, finish, etc
Maximum Marks		120	60	20
Minimum Marks	Premium Butter	113	55	19
	Standard Butter	112	54	18

It should be noted that the butter is not classed as " standard " or " premium " if, while conforming with the regulations regarding moisture content, if scores less than the minimum number of marks prescribed under any of the above headings.

Of the 12 inspections held during the period under review 7 were held in Belfast and the remaining 5 across the Channel, viz., in Glasgow (2), Manchester, Newcastle-on-Tyne and Liverpool, respectively. At each centre the butter was judged by two prominent local butter merchants. During the year a special effort was made to arouse the interest of the cross-Channel wholesale trade in Northern butter, and the Ministry is confident that its propaganda measures in this direction will be productive of

good results. In the first place, arrangements were made after each inspection for an exhibition of the butter to take place—usually in the Exchange or some prominent centre of trade activity. To these exhibitions all the local wholesale provision merchants were invited and were afforded an opportunity of examining the samples of butter, and were also supplied by the Ministry's representatives at the exhibition with any information they might desire on the subject. Further reports of the inspections and exhibitions appeared in the general Press, and in some cases photographs were obtained and given prominence in local journals. Moreover, at some of the cross-Channel centres local interest was further stimulated by having the results of the inspection broadcasted from the local wireless station.

Ministry's Special Stamp.—It is felt that the time has come when the creameries in Northern Ireland should make an effort to establish for their produce a commercial reputation based on uniform high quality and identified with the area of origin. The scheme—a copy of which appears at pages 26 of the appendices—provides for a uniform marking of boxes with the trade description, "N.I. PURE CREAMERY BUTTER—lbs. net." This description is now in use by a number of creameries, and will be adopted by others as the supply of boxes otherwise branded becomes exhausted. It has also been arranged that the official number allotted by the Ministry to the creamery should be stamped on the box, and creameries are urged to build up for their output an individual reputation of which the number will be the synonym.

To those creameries which have gained at least standard marks in surprise butter inspections six times in succession the Ministry awards a special stamp, of which an impression is shown at page 28 of the appendices. The appearance of this stamp, which is in essence a government brand, indicates that the creamery is consistently producing butter of high quality.

Wide publicity has been given to the significance of the stamp in the markets where Northern Ireland creamery butter is disposed of, and this fact, taken in conjunction with the exhibitions which have been arranged in centres in Great Britain after each inspection, has done much to develop a more general appreciation of the merits of the butter sold under this special mark.

Of a total of thirty-eight creameries participating in the surprise inspections, twelve have now gained the right to use the special stamp, and while it is yet too early to draw any general conclusions from experience of administration of the scheme, there is evidence that the quality of the butter produced by the creameries generally is showing improvement.

Training of Dairymaids.—Under this scheme selected pupils from the Ulster Dairy School who are desirous of becoming dairymaids are afforded a course of practical training in creamery work

at approved creameries, the Ministry making a contribution towards the cost of their board and lodgings during the period of training. The course usually covers a period of 20 weeks, and at its termination, provided their work has been satisfactory, the girls are awarded by the Ministry a certificate of competency in creamery butter-making, and efforts are made by the Ministry's dairying inspectors to place them in positions as dairymaids. Small grants are also made at the conclusion of the course to the manager and head dairymaid at the creamery where instruction was given. During the period under review three pupils were offered scholarships and were trained at selected creameries. It is of interest to note that the four girls who completed their period of training towards the close of the year 1923 all qualified for the award of the Ministry's certificate in creamery butter-making.

Instruction in Creamery Management.—During January, February and March, 1924, the Ministry conducted four courses of instruction, each of two weeks' duration, in this subject to which all managers of auxiliary creameries were invited. In all 42 managers attended the courses.

The lectures, which were delivered by Messrs. R. H. Wilkinson and A. Alcorn, the Ministry's Dairying Inspectors, were much appreciated by those who took advantage of the course.

8. Agricultural Laws.

Horse-breeding Act, 1918.

The number of stallions licensed during the year was 141, as compared with 153 in the previous year and 168 in the year 1922.

County	Number of applications for licences for season			Number of licences granted			Number of licences refused		
	1922	1923	1924	1922	1923	1924	1922	1923	1924
Antrim	53	53	41	51	44	33	2	9	8
Armagh	8	9	10	8	6	8	—	3	2
Down	52	43	44	47	42	38	5	1	6
Fermanagh	10	15	9	10	10	9	—	5	—
Londonderry	35	38	38	31	35	34	4	3	4
Tyrone	27	21	22	21	18	19	6	5	3
Totals	185	179	164	168	153	141	17	26	23

In 1924 17 stallions were rejected for bad conformation, 3 for unsoundness, and in the remaining three cases both of these defects were present.

There was no instance during the year of an appeal against the Ministry's decision to refuse to grant a licence for a stallion.

The following table shows the number of stallions of each breed licensed in each county for the 1924 season :—

County	Thoroughbred	Clydesdale	Shire	Suffolk Punch	Irish draught	Half-bred	Hackney	Pony	Totals
Antrim	2	11	1	—	—	6	7	6	33
Armagh	1	1	—	—	—	4	1	1	8
Down	14	14	1	1	—	4	1	3	38
Fermanagh	1	2	—	—	—	2	—	4	9
Londonderry	1	24	—	1	—	3	3	2	34
Tyrone	3	11	—	—	1	3	1	—	19
Totals	22	63	2	2	1	22	13	16	141

Four stallions, all of the clydesdale breed, died before the end of the season. Two of these were located in county Londonderry and one each in counties Down and Tyrone.

A prosecution under the Act—the second of its kind—was instituted against the owner of an unlicensed stallion who was using the horse for stud purposes. A conviction was obtained, and the owner of the animal was fined, with costs.

Live Stock Breeding Act (Northern Ireland), 1922.

It will be recollected that the above-mentioned Act originated in the widespread desire of all agricultural interests to safeguard and develop the Northern Ireland cattle-raising industry by eliminating inferior sires. Experience of the first year's operations shows that in the actual working of the Act the Ministry is receiving the cordial co-operation of farmers generally.

Inspections of bulls offered for licence were held at local centres in February and September, and, with a view to reminding owners of bulls of their obligations under the Act, information regarding the procedure to be adopted for procuring licences was widely disseminated some time previous to each of these inspections. The Ministry also carried out inspections of bulls exhibited at the spring sales held by the Royal Ulster Agricultural Society at Balmoral and by the North-West of Ireland Agricultural Society at Londonderry. Breeders of pure-bred bulls which reached the prescribed age on 31st March, 1924, were thus enabled to have their animals inspected for licences at these sales instead of at the local centres. A like privilege was also specially granted to persons who entered bulls for a few representative local sales.

In connection with the first inspections under the Act, which were held in September, 1923, there was a total of 4,133 bulls licensed, while 252 bulls were rejected. All these animals reached the prescribed age on the 1st January, 1924.

The following tables contain particulars regarding the results of the inspections held in February and March, 1924, either at local centres or at recognised sales, of bulls which were of the prescribed age on the 31st March, 1924 (Table A). Table B deals with similar inspections in September, 1924, of bulls which attained the prescribed age on the 30th September, 1924 :—

TABLE A.

County	Number of applications for licences	Number of licences granted	Number of licences refused	Number of bulls withdrawn, castrated or dead before inspection	Number of bulls yet to be inspected (late applications)
Antrim	732	561	129	40	2
Armagh	259	201	45	13	—
Down	425	340	56	27	2
Fermanagh	251	206	27	12	6
Londonderry	362	271	53	34	4
Tyrone	645	497	67	69	12
Totals	2,674	2,076	377	195	26

TABLE B.

County	Number of applications for licences	Number of licences granted	Number of licences refused	Number of bulls withdrawn, castrated or dead before inspection	Number of bulls yet to be inspected (late applications)
Antrim	332	230	86	10	6
Armagh	114	91	18	3	2
Down	140	96	29	4	11
Fermanagh	47	34	8	2	3
Londonderry	97	70	19	1	8
Tyrone	218	164	39	3	12
Totals	948	685	199	23	42

It will be observed from the foregoing that the percentage of cases in which licences were refused as a result of each of the first three inspections was as follows :—

September, 1923 ... ... 5.7 %.
February, 1924 ... ... 15.4 %.
September, 1924 ... ... 22.5 %.

The Act contains a provision enabling the owners of rejected bulls to appeal against the decision of the Ministry. There were 19 such appeals, and the bulls were duly examined by referees appointed as provided in the Act. Having considered the reports of the referees the Ministry felt bound to confirm the original decisions in 12 instances, while in the remaining 7 cases licences were granted.

Of the 6,894 licences granted a total of 859 have been cancelled, the bulls concerned having been either slaughtered, castrated or exported from Northern Ireland. The number of licences in force on the 30th September, 1924, was, therefore, 6,035.

A guide to the Act, in which are set forth full particulars of its provisions and of the procedure to be adopted was prepared and circulated widely amongst all persons interested. A copy of this guide should be in the hands of every bull owner.

During the year the Ministry was reluctantly obliged to take legal proceedings against 26 persons, who persisted, despite repeated warnings, in retaining unlicensed bulls contrary to the provisions of the Act, and convictions were obtained in every instance. The Ministry desires to record its high appreciation of the valuable assistance rendered by all ranks of the Royal Ulster Constabulary in the enforcement of the provisions of the Act.

Animals Quarantine Station.

The widespread nature of the attack of foot-and-mouth disease which rapidly developed with such disastrous results in Great Britain towards the end of 1923, rendered it necessary that exceptional precautions should be taken to prevent the entrance of the disease into Northern Ireland. After careful consideration it was decided that it would be prudent to close the quarantine station until such time as the position in Great Britain became less serious. The station was, accordingly, closed from December, 1923, until October, 1924. Arrangements were made in the latter month for the importation through the station of a number of pure-bred cattle purchased in Scotland by residents in Northern Ireland.

Markets and Fairs (Weighing of Cattle) Acts, 1887 and 1891.

Inspections were carried out by the Ministry's officers during the year under the above-mentioned Acts, and it was ascertained that of the ten markets inspected in five cases the Acts did not apply, and in the remaining cases the weighing arrangements were satisfactory.

Destructive Insects and Pests (Northern Ireland) Order, 1922.

In the working of this Order, which governs the importation into Northern Ireland of plants, etc., from foreign countries, the Ministry received every assistance from the Customs Authorities, who furnished information as to the arrival of any consignments unaccompanied by the prescribed health certificates. In none of the cases so notified in which the Ministry considered examination advisable was the consignment found to be affected by any of the scheduled insects or pests.

During the period under review 420 certificates were received in respect of consignments of plants imported from abroad. The

imports chiefly came from Holland, but Belgium, France, Germany, Italy, New Zealand and the United States of America were also included in the list of exporting countries. The large majority of these imports was composed of bulbs, but shrubs, gooseberries and onion seed were also imported.

Sale of Diseased Plants (Northern Ireland) Order, 1922.

Under this Order the Ministry's Inspectors visited various auctions and examined all plants, etc., exposed for sale. Altogether 67 such examinations were carried out, and in no case was it found necessary to prevent the sale of any of the plants offered.

Regulations Affecting the Export of Plants

Health certificates in respect of consignments of plants for export to foreign countries were issued in 120 cases after inspection, as enumerated below :—

Country to which exported	Number of certificates issued in respect of				Total
	Rose Trees (including stocks)	Shrubs	Herbaceous Plants	Bulbs, Corms, etc.,	
U.S.A.	10	—	2	—	12
Canada	36	—	3	1	40
New Zealand	15	1	—	4	20
France	7	4	1	—	12
Holland	4	1	1	—	6
Australia	3	—	—	2	5
Jamaica	5	—	—	—	5
Siam	3	—	—	—	3
South Africa	3	—	—	—	3
Other Countries	14	—	—	—	14
Total	100	6	7	7	120

In addition regular inspections were made of the more important nurseries in Northern Ireland.

American Gooseberry Mildew and Black-currant Mite (Ireland) Order, 1912.

The following table shows the number of cases of these diseases reported during the period under review :—

County	American Gooseberry Mildew	Black Currant Mite
Antrim	6	11
Armagh	—	17
Down	4	15
Fermanagh	1	—
Londonderry	—	1
Tyrone	—	1

During the year three notices to destroy were issued, one for American gooseberry mildew and two for black currant mite, with the result that 60 gooseberry bushes and 202 black currant bushes were destroyed.

In addition the Ministry's inspectors, while examining nursery stock exposed for sale in Belfast, found two cases where gooseberry bushes were affected with disease. In both these cases notices requiring the destruction of a total of 111 affected bushes were issued.

During an inspection by one of the horticultural instructors of the fruit exposed for sale in the Belfast Fruit Market, a small quantity of gooseberries was found to be diseased, and a notice requiring the destruction of the fruit was issued.

Under this Order 15 licences for the importation from Great Britain of black currant bushes and 2 for gooseberry bushes were granted. Three nurseries were examined during the year on application from the owners, and certificates as to health of gooseberry and black currant bushes were issued.

Seeds Act, 1920.

In connection with the provisions of this Act, which controls the Northern Ireland cross-Channel sales of agricultural seeds, the Ministry's inspectors visited the premises of wholesale merchants in Belfast for the purpose of sampling imported seeds.

The examination of these samples goes to show, that on the whole, the quality of the seed is satisfactory.

Weeds and Agricultural Seeds (Ireland) Act, 1909.
1. *Noxious Weeds.*

It was found to be practicable in the summer of 1924 for the first time since the establishment of the Ministry to take some steps towards enforcing the provisions of Part I. of the abovementioned Act. Subject to the consent of the individual county and county borough councils, the Ministry is by these provisions empowered to make Orders for the counties and county boroughs in Northern Ireland, declaring that throughout these areas all plants of certain specified species are noxious weeds for the purposes of the Act. Furthermore, the Ministry on being satisfied that there are noxious weeds growing on any lands may serve a notice on the owner or occupier requiring him to destroy the weeds within a specified time. Failure to comply with the requirements of such a notice renders the person liable to a penalty not exceeding £5 for a first offence.

Early in the year a communication, of which a copy appears at page 55 of the appendices, was addressed to each of the local authorities in Northern Ireland informing them that the Ministry proposed to put the Act into force, and asking for the concurrence

of the councils to proceed as proposed in their areas. As a result, resolutions of consent were received from all the county councils and county borough councils in Northern Ireland. The following table shows the weeds scheduled as noxious in each county :—

Antrim	...	Ragwort,	Thistle	and	Dock.
Armagh	...	do.	do.	do.	
Down	...	Ragwort,	Charlock,	Coltsfoot,	Thistle and Dock.
Fermanagh	...	do.	do.	do.	do. do.
Londonderry	...	Thistle,	Dock,	Coltsfoot.	
Tyrone	...	Ragwort,	Charlock,	Coltsfoot,	Thistle and Dock.
County Borough of Belfast	...	do.	do.	do.	do. do.
County Borough of Londonderry		do.	do.	do.	do. do.

Six temporary inspectors were employed for some six weeks from the beginning of July with instructions to report all cases of the prevalence of noxious weeds coming under their observation in the particular area assigned to each.

Practically all notices served on occupiers, who were reported by the inspectors as having noxious weeds growing on their lands, were satisfactorily complied with, but it was found necessary to institute proceedings in three cases.

2. *Agricultural Seeds.*

Operations under Part 2 of the Weeds and Agricultural Seeds (Ireland) Act, 1909, which provides for the sampling by the Ministry of agricultural seeds exposed for sale, followed on the lines of previous seasons. One hundred and fifty-six samples of seeds were officially taken and analysed at the Ministry's seed testing division. The results of these analyses show that on the whole the quality of the agricultural seeds exposed for sale in Northern Ireland continues to be satisfactory.

Bee Pest Prevention (Ireland) Act, 1908.

The following table shows the activities of the horticultural instructors in connection with the control of diseases of bees :—

County	Number of Visits paid	Number of Stocks examined	Cases reported		
			Isle of Wight	Foul Brood	Pickled Brood
Antrim	124	324	5	3	—
Armagh	137	371	4	—	—
Down	127	327	6	—	—
Fermanagh	344	737	—	12*	—
Londonderry	34	116	6	—	—
Tyrone	58	215	19	21	6

* In one of these cases it was found necessary to issue a destruction notice, the provisions of which were duly complied with.

From the reports which were received from the instructors it appears that the weather conditions prevailing throughout the season have been most unfavourable to bee keepers, and in several cases, notably in county Tyrone, this has caused the extermination of a large number of stocks. These conditions may account to some extent for the number of cases of disease reported in county Tyrone, where hives were also found dead from cold and starvation.

Fertilisers and Feeding Stuffs Act, 1906.

The report of the committee appointed by the Ministry of Agriculture and Fisheries, to which reference was made in the Ministry's last Report, has now been issued. The report emphasizes the need for very considerable reconstruction of existing legislation with regard to both fertilisers and feeding stuffs, but this is a matter in which it is desirable that wherever practicable Northern Ireland should follow the general lines of Imperial legislation. The Ministry will, therefore, on this question keep in close touch with the English Ministry.

From the results of the regular inquiries made by the Ministry as to the quality of the fertilisers and feeding stuffs which are at present on sale in Northern Ireland it would appear that generally speaking the position is satisfactory.

It also appears from the Ministry's investigations that there is in Northern Ireland a general tendency on the part of sellers of both fertilisers and feeding stuffs to fail to give in every case of sale the specific invoice required by the Act. In order to counteract this tendency the circular, of which a copy will be found at page 55 of the appendices, was prepared and issued.

Representations were made to the Ministry that the commodity sold as " yellow meal " was often found to contain ingredients other than those derived from maize. The Ministry caused this allegation to be carefully investigated, and samples of the feeding stuff were drawn in different areas and analysed. In no case was it found that the samples contained any ingredient other than maize.

The systematic sampling by official samplers of both fertilisers and feeding stuffs continues, and during the year 37 samples of feeding stuffs and 33 samples of fertilisers were so taken. Appropriate action is taken in any cases in which subsequent analysis discloses any unsatisfactory features.

A case was brought to the notice of the Ministry in which fish meal containing a very high percentage of oil was being sold and in which the specific invoice required by the Act had not been furnished by the wholesaler to the retail merchant. Proceedings are being instituted against the former trader.

In another instance it appeared that linseed cake meal containing an admixture of peanut meal was being sold without the requisite invoice. Proceedings in this case also are being instituted.

Sale of Food and Drugs Acts, 1875-1907.

During the year ended 30th June, 1924, samples were taken by local inspectors with the following results :—

Description	No. of Samples	No. of Prosecutions	No. of Convictions	Penalties Imposed
Milk	1698	111	66	£118 5 6
Buttermilk	513	42	33	81 15 0
Butter	946	22	16	12 19 6
Margarine	379	—	—	
Cheese	332	—	—	
Totals	3868	175	115	£213 0 0

In comparing these figures with those for the previous twelve months, it will be observed that there was a large increase in the number of samples. During the year ended 30th June, 1923, 1,602 samples were taken, 55 prosecutions instituted and 36 convictions obtained, the penalties imposed amounting to £53 10s 0d.

Samples of butter taken at two creameries in Northern Ireland were found on analysis to contain more than 16 per cent. moisture. The Ministry drew the attention of these creameries to the seriousness of this offence, and warned them that, if improvements were not made, steps would be taken to have proceedings instituted under the Sale of Food and Drugs Acts. In further samples examined the percentage of moisture was found in each case to be well below the statutory limit.

The premises registered under Section 9 of the Margarine Act, 1887, and Section 7 (4) of the Sale of Food and Drugs Act, 1899, for wholesale dealings in margarine at present number 139. During the period under review three registrations were effected and eleven cancelled in the county borough of Belfast.

The present distribution of premises so registered is as follows—

County Borough of Belfast	104
,, ,, ,, Londonderry	10
County Antrim	*11
,, Armagh	5
,, Down	6
,, Fermanagh	1
,, Londonderry	1
,, Tyrone	1

*Includes one margarine-cheese factory.

No additional registrations were made under section (1) of the Butter and Margarine Act, 1907, which requires the registration of all premises upon which by way of trade butter is blended or reworked, but not so as to cease to be butter.

Under section 10 of the Butter and Margarine Act, 1907, 58 fancy or descriptive names were approved by the Ministry for use in connection with margarine. In 18 cases approval was withheld.

Marketing of Eggs Act (Northern Ireland), 1924.

Considerable attention has in recent years been devoted by agricultural authorities in certain foreign countries and British Dominions to the development of the poultry industry, and the progress achieved under the direction of those authorities has afforded a glimpse of the possibilities of development in the Northern Ireland egg trade if organized on a practical and scientific basis.

As may be seen elsewhere in this Report the Ministry is actively engaged in fostering increased production, both directly and through the medium of the county committees' educational schemes. Material progress can be marked in both the numbers of poultry kept in Northern Ireland and in the average yield per bird, and there is abundant evidence to show that the profit-earning capacities of poultry are being more widely realized. Increased production must, however, be discouraged unless there is a ready market for the disposal of Northern Ireland eggs, and as the quantities produced are far in excess of home requirements it naturally follows that the whole structure of the industry depends to a considerable extent upon the exploitation of markets outside Ulster. In a variety of ways, and having in mind the ultimate effect on the export trade, the Ministry has endeavoured to improve the commercial reputation of Northern Ireland eggs. Producers are constantly reminded of the desirability of marketing eggs in a clean and fresh condition : through the agency of the local sanitary authorities vigorous action has been taken to discourage the overholding of eggs until they have become unsound : advice and instruction is always at the disposal of egg merchants as to the improvement in their business methods, and every effort is made to establish business relations between exporters and reputable firms in Great Britain.

While it would be unfair to assume that the Ministry's activities have failed to effect improvement, it is, nevertheless, a fact that the position of Northern Ireland eggs in the British market has been seriously impaired, especially in recent years. Post war economic conditions have contributed to the unsatisfactory position in which the export trade is now placed. With the cessation of hostilities and the re-opening of the trade routes, supplies, of excellent quality and attractive appearance, became available from other egg producing countries, which naturally led to the falling off in the demand for Northern Ireland eggs.

Such was the position when the question came under review by the Commission appointed, under the presidency of Lord Charlemont, to enquire into the natural and industrial resources

of Northern Ireland. After an exhaustive examination of all the aspects of the question that Commission issued a Report in which was emphasized the necessity of State action to effect a thorough re-organization of the system of distribution. The Report was adopted by the Ministry as the basis of its legislative proposals, which are now embodied in the Marketing of Eggs Act, 1924.

In the Act the broad principles of policy have been laid down in the form which was considered adaptable to the peculiar needs of the situation in Northern Ireland, administrative detail and development of the principles being reserved for inclusion in rules to be made by the Ministry under the Act. From a perusal of the Act which is set out in full at p. 69 of the appendices it will be seen that in its material provisions it relates only to the wholesale trade. Wholesale dealers must be licensed by the Ministry, and it is a condition of the granting of the licence that an undertaking is given to the Ministry to comply with the Rules. It is an offence for any person without the Ministry's licence to sell eggs by wholesale. Therefore, those, such as general dealers, who may only occasionally buy and sell eggs by wholesale and are not sufficiently identified with the trade as to find it worth while to make any special effort to keep up the reputation of Northern Ireland produce, are brought within the scope of the Act.

The licensing of wholesale dealers, with the consequential supervision of the business methods of those dealers, is intended to ensure that so far as eggs for human consumption are concerned only properly graded, clean, fresh eggs will reach the retail purchaser, and that they will be properly packed in cases of uniform construction. Other subsidiary clauses deal with specific questions affecting the wholesale trade In the season when fresh eggs are scarce and dear, pickled, cold-stored and preserved eggs are often mixed with fresh eggs and sold as such. In future all premises on which, by way of trade, eggs are pickled, cold-stored or preserved must be registered with the Ministry, and the owners or occupiers of such premises will be called upon to furnish to the Ministry returns as to the delivery, ownership and removal of consignments.

Further provisions which call for the branding and labelling of cases containing pickled, cold-stored and preserved eggs when exposed for sale, whether by wholesale or retail, complete the arrangements for the prevention of fraudulent practices. At the same time the Ministry has been careful not to shackle the legitimate trade in these classes of eggs.

Merchants have been handicapped by the absence in most markets where eggs are sold of suitable accommodation for packing under cover. Too often complaints are made as to the bad flavour of eggs in cases despatched from Northern Ireland, and in many instances these complaints are due to the fact that consignments have been packed in the open where the packing material

had become damp, and thus injurious to the flavour of the eggs. Market authorities for markets where tolls are collected in respect of the sale of eggs are required to provide suitable covered sheds, and although it has not been practicable to make it mandatory on other market authorities who do not possess the right to collect tolls to provide similar accommodation, the Ministry is not without hope that when the full facts as to the importance of the interests involved are realized such authorities will lend their sympathetic co-operation.

Another feature of the Act is the bringing into general use the machinery of the Public Health Acts for the prevention of the sale of eggs unfit for human consumption. Elsewhere in this Report will be found details of the action, behind which the Ministry is the motive force, taken under these Acts, but the drawback to the success of this work was that the option of bringing the various powers into play lay with the local authority, and that for various reasons certain authorities could not see their way to fall in with the majority. No quarrel can be taken with the point of view taken up by these authorities, whose chief objection was that the provisions to be adopted dealt with a wide variety of subjects, but this difficulty has been surmounted by applying in the Marketing of Eggs Act the powers derived from the Public Health Acts so far only as eggs are concerned. This procedure will enable uniform action in the matter to be taken over the whole area.

In the drafting of the Bill, which was ultimately placed on the Statute Book as the Marketing of Eggs Act, 1924, and in the formulation of the rules made in pursuance of that Act the Ministry consulted frequently representatives of the several interests concerned in the Northern Ireland egg industry. By this procedure the Ministry has been greatly facilitated in securing legislation on lines acceptable to the industry as a whole.

Stale and Bad Eggs.—Although the Ministry intended to include in the Bill provisions for bringing Part III. of the Public Health Act Amendment Act, 1890, into force, in every loca sanitary area in Northern Ireland, so far as that Act applied to the exposure for sale of eggs unfit for food, efforts were at the same time continued to induce the councils of those areas which had not hitherto adopted the Act to do so on their own initiative, and to make use of the powers so derived at the earliest practicable date. Of a total of 64 local authorities 47 have now brought Part III. of this Act into operation. The services of the Ministry's inspectors continued to be made available for the training of sanitary sub-officers in the testing of eggs for freshness, and during the period under review 13 such officers were trained and received certificates of competency.

It is gratifying to record that, on the whole, local authorities in Northern Ireland have taken up a very firm attitude against persons who sell or expose for sale eggs which have become unsound. The practice is, of course, carried on only while prices

are rising, and has resulted in very serious loss to the trade in general. Since October, 1923, 16 prosecutions have been sucessfully initiated by different local authorities, and there is evidence that they have been followed by a marked improvement in the quality of the eggs sold in the locality.

The maximum results can not, of course, be expected from the administration of this enactment until it is in general operation.

Rules.

In framing the rules under the Act the Ministry has kept before it the desirability of causing the minimum of dislocation compatible with the attainment of the reorganization of the industry within a reasonable period. Following this principle certain of the conditions to be observed are couched in terms which leave some latitude to the Ministry in their interpretation and reserve a certain freedom of action to meet possible developments.

The licence prescribed under the Act will be issued to each wholesale dealer who subscribes to the undertaking to comply with the terms of the rules. To this extent the licence must be regarded as provisional in character, and it will be for the Ministry to withdraw it should the requirements imposed by the rules not be faithfully carried out. The withdrawal of a licence is, however, a very serious step to envisage, as it will render any further wholesale transactions on the part of the individual concerned an offence against the Act, and it will not be taken without full consideration of all the circumstances affecting the case. Moreover, it would constitute an offence for any other person to deal by way of wholesale purchase with any dealer whose licence had been withdrawn. The proposals in regard to licensing will entail close supervision of the work of each trader and a certain elasticity in the Ministry's attitude towards what should be regarded as the due observance of the rules.

Premises.—In the article prescribing conditions applicable to the premises used by wholesale dealers for the purposes of their business the Ministry designedly refrained from stipulating the precise nature and extent of the accommodation requisite for the proper grading, testing and packing of eggs and for the storing of empty cases, packing material and cases of eggs awaiting consignment. Many factors enter into the consideration of this aspect of the problem, and it is manifestly impracticable to deal with it otherwise than by examination in detail. Each particular case will be sympathetically considered on its merits, provided that the trader concerned shows a disposition to meet the requirements of the Ministry as a result of examination of the premises. Alterations found to be necessary will be explicitly detailed, the period within which they should be completed being obviously a matter which depends upon the circumstances of each case.

It is the Ministry's intention, however, to call for a strict observance of the fundamental requirements as to adequate lighting and ventilation, the provision of dry floors and the keeping of the premises in a dry, clean and sanitary condition.

Initial steps have been taken to bring the requirements of section 4 of the Act, relative to the provision and maintenance of suitable covered sheds, to the notice of market authorities for markets where tolls are authorised to be taken for the sale of eggs, and it is hoped as a result of the action taken under this section to arrange for improved facilities for wholesale dealers attending these markets. It has been made clear, however, that notwithstanding the responsibilities placed on these authorities, wholesale dealers are not relieved of the obligation to conduct all their packing operations under cover. Such has been the injury to the trade in general attendant on packing in the open that the Ministry will take steps to ensure its discontinuance in every market.

Cases.—The question of the form of the rules to be laid down in regard to cases occasioned the Ministry very considerable difficulty. While there is much to be said for the arguments advanced by certain sections of the trade that, in competition with foreign countries and the dominions, Northern Ireland cannot afford to despatch eggs to Great Britain in cases which admit of the possibility of unfavourable comparison in regard to appearance, the Ministry cannot overlook the fact that there is in existence in Northern Ireland an established and fairly extensive business of manufacturing of egg cases from home-grown timber, and that to interfere unduly with this industry would be to move in direct contradiction of its responsibilities as the authority charged with the duties of the Forestry Commission. It was originally intended to prescribe actual maximum weights for each of the three standard cases, viz., 34 lbs. for No. 1 standard case, 17 lbs. for No. 2 standard case, and 13 lbs. for No. 3 standard case, and in that way prevent the use of the more unsuitable hardwood timbers, and at the same time obviate complaints as to heavy transit charges on consignments exported. Investigations specially conducted on behalf of the Ministry have, however, led to the conclusion that such action, without ample notice being given beforehand, might in several districts involve real hardships to some saw-mill proprietors. The Ministry was accordingly constrained to defer for the present the consideration of prescribing maximum weights, but this course of action renders it the more imperative to ensure that the remaining stipulations as to the nature and condition of the timber to be used will be stringently enforced. Members of the trade have been informed that the Ministry will take serious note of the use of cases constructed of timber which does not comply with the specifications issued, i.e., that it shall be well seasoned, clean, dry and free from bark, wane and feather, and a recommendation has been added that efforts should be made to keep the weight of the boxes below the figures mentioned above.

The rules also made it clear that cases used for the carriage of grade eggs are non-returnable. For this condition sound commercial reasons can be adduced—the original stencilled markings would not necessarily serve a second time, and might even be put to irregular uses; the strength of the case, impaired as it would be by the first journey, would not always be sufficient to ensure safety in transit, and the general appearance of re-used cases is usually far from attractive.

Testing.—The Ministry attaches very great importance to the terms of the rules designed to deal with this feature of the egg trade. For years past it has been a common practice for some producers, wholesale and retail merchants to hold up supplies while prices were rising, and their action has occasioned serious injury to the trade which has been cumulative in effect. The Ministry has always taken every possible step to prevent overholding, and has been careful in framing this regulation to take very wide powers. While it has not for the present been found necessary to prescribe the testing of eggs singly during the period from the 1st January to the 30th April, the obligation has nevertheless been placed on the merchant to conduct his business in such a way during that period as to ensure that only fresh or new-laid eggs are included in consignments. In cases of doubt or suspicion testing—even within the free period mentioned—is strongly recommended to wholesale dealers, as inclusion in consignments of any eggs which reveal on examination any of the characteristics of staleness or unsoundness may entail the forfeiture of the licence.

From the 1st May to the 31st December all eggs intended for sale by wholesale or for cold storing must be tested singly by means of an approved type of lamp. On withdrawal from cold store it has been prescribed that testing is not obligatory provided the case is sold under the description known in the trade as "W.A.F." (with all faults).

Grading.—Apart from the intrinsic quality of the eggs no factor is more important in the disposal of consignments in the British market than uniformity in the size of the eggs contained in each case. It is obviously a matter of considerable difficulty to select eggs so that they weigh a specified number of pounds per 120 and are at the same time identical in size. It will satisfy the regulations, however, if each 120 weighs within half a pound of the nominal weight of the grade.

Some experience of close grading will no doubt enable wholesale dealers to guarantee that each grade is fully the nominal weight, and this course is being recommended by the Ministry as being obviously desirable.

Eggs which are rejected on test or which are too small for inclusion in the lowest grade adopted can be disposed of only under special authority of the Ministry. It is the Ministry's intention

to keep a careful watch on the movement of such consignments and to guard against their irregular disposal. Similar precautions are envisaged for the sale of dirty eggs. The regulations do not allow of their being cleansed by washing or steeping, so that wholesale dealers to safeguard themselves will no doubt refuse to purchase them—a fact which should in a short time bring forcibly to the notice of producers the necessity for suitable nesting places for birds and for marketing the eggs in a clean condition.

Packing.—It is common knowledge that eggs are liable to become affected in flavour by contact with any article having a pronounced odour. For this reason the selection of the packing material calls for the exercise of care. Experience has shown that on the whole more satisfactory results are obtained from the use of non-odorous wood-wool than from straw, but provided the latter is of good quality, clean and dry, it proves a reasonably suitable packing material, and its continued use is permitted. Dampness in straw, however, leads to deterioration in the eggs, hence the provisions requiring the storing of packing material and of cases of packed eggs in suitable covered premises and the prohibition of packing in the open.

The use of trays for packing purposes is regarded as unsuitable for achieving the desired standard of efficiency in packing, and is being prohibited. Moreover, hand-packing facilitates closer grading to weights.

Collectors of Eggs.—The Ministry appreciates that the business of collectors differs materially from that of the bigger wholesale firms, and it has accordingly been necessary to make the rules applicable to such collectors somewhat less onerous. At the same time the business methods of many collectors call for drastic improvement, and in the interest of the trade in general the Ministry proposes to insist on a strict observance of the modified conditions specified in their case.

9. Flax and Potato Industries.

(a) *Flax Industry.*

A review of the statistical returns for the past fourteen years shows that in the five years' period 1910-14 inclusive the average area under flax was 44,893 acres; during the boom years 1918-20 inclusive the average increased to 92,385 acres owing to the high prices received for this commodity during the war, but a sharp reaction then set in—the acreage falling to 32,432 acres in 1921 and to 29,117 acres in 1922. The areas for the two years 1923 and 1924 were 42,712 and 42,838 acres respectively.

A feature of the boom years 1918-20 was that extensive areas of flax were grown in districts of the country in which the flax crop had been practically non-existent prior to 1914. In these

districts the area under flax is now again negligible, and the production of flax is at present mainly limited to the areas in which it was most intensively grown prior to 1914.

Another feature of the industry is that in each year since 1917 the yields of flax have been poor, and that in none of these years has there been a yield obtained equal to the average yield for the decade of 1901-1910. To some extent this could be accounted for by unfavourable seasons, and in boom years to the fact that a large proportion of the crop was grown on unsuitable land and by inexperienced flax growers. The continuance, however, of low yields during each of the past seven years affords considerable support to the opinion held by many experienced flax growers that deterioration of seed is an important factor in this matter. It is not held that such deterioration consists merely of low germination of the seed, but rather that it is due to an inherent deterioration in the character of the crops of flax from which the seed is produced. In connection with the low yields that have prevailed during the past seven years, it is impossible to dogmatize as to the extent to which seed has been a factor. It has, however, been definitely established by the Ministry's experiments that new pure line varieties of flax have been raised from selected plants, the seed of which is capable of producing crops much superior to those grown from commercial seed.

It is clear, therefore, that the chief means by which the quality of our flax seed supplies can be improved is by the propagation on a commercial scale of seed of the best pure line varieties of flax that are available, and this aspect of the matter is receiving careful consideration.

Seed Selection by Growers.—Reference to this scheme appeared in Ministry's first annual Report, page 49.

The scheme was started in 1922 with the object of testing the practicability of farmers propagating stocks of flax seed of their own selections to meet their own requirements. Of 37 farmers who made selections in 1922, about half of them succeeded in saving seed from their 1923 crop, but none of them succeeded in saving any seed in 1924.

It may be mentioned that in both these latter seasons the weather was most unfavourable. The only conclusion, however, that can be drawn from the operation of this scheme is that it is not practicable for farmers in general in this country to propagate seed for their own requirements from their own selections.

Variety Trials.—The results of the variety trials of 1923 were published by the Ministry in leaflet form early in 1924. These results confirmed those which had been obtained in previous years with regard to the superiority of several pure line varieties of flax seed as compared with that of such varieties as are generally sown.

In these trials the most outstanding varieties in point of merit were the two pure lines Danish No. 21 and " J.W.S."

Particulars of the trials which are being carried out in 1924 will be found on page 19 of the appendices. Two Dutch and one Danish Pure Line No. 40 varieties have been added.

Flax Demonstrations.—Twenty-four demonstration plots were laid down by the instructors. The two pure lines Danish No. 21 and " J.W.S." produced much more promising crops than any of the remaining varieties.

General.—During the year representative farmers were conducted around the experimental flax plots at Stormont and Coleraine. A tour of the flax demonstration plots at the North-West Agricultural School was also carried out to which members of the local farmers' unions and the principal produce merchants and seedsmen were invited.

Information as to the probable supplies of flax seed for sowing in 1924 was collected and embodied in a leaflet, copies of which were distributed to the various agricultural societies, farmers' unions, seed merchants, etc.

Instructors.—For the purpose of advising and assisting farmers in the better cultivation of the flax crop and of giving instruction in scutch mills seven officers were employed during the year and were stationed as follows :—

Flax Supervisors.	*Flax Instructors.*
Strabane.	Armagh.
Belfast.	Ballymena.
	Coleraine.
	Lisnaskea.
	Magherafelt.

Two of these officers were temporarily employed visiting scutch mills, with the object of securing the observance of the provisions of the Scutch Mills Act (Northern Ireland), 1923.

Scutch Mills Act (Northern Ireland), 1923.

This Act became operative on the 1st August, 1923, and reference was made in the Ministry's Report for last year to its objects and provisions. During the year inspections were carried out at 273 scutch mills, and in most cases scutch mill owners were found to be anxious to comply with the obligations imposed upon them by the Act.

In 43 cases the attention of scutch mill owners was drawn in writing to the need for their observance of such obligations.

Flax Water Committee.—This committee, referred to in the Ministry's last annual Report, was appointed in July, 1923, by the Imperial Secretary of State for Home Affairs and the Minister of

Agriculture for Northern Ireland, and in October of that year presented an unanimous report. The terms of reference of the committee were " to inquire and report what steps should be taken, having regard to the interests alike of fishery protection and of the flax industry, to provide for the innocuous disposal of water in which flax has been steeped; and to submit recommendations as to the modifications, if any, which should be made in the existing Law on the subject."

The committee expressed the opinion that " a majority of flax growers are anxious to avoid in every practicable way any injury to fisheries. And, at the same time, the Boards of Conservators and the majority of fishery proprietors, tenants and water bailiffs are equally averse from hindering or hampering unnecessarily the activities and operations of flax growers and retters." The report, however, contemplated mutual concessions on the part of both the flax growing and the fishery industries with the object of definitely removing the friction which has hitherto existed between these interests.

The principal recommendations made by the committee were summarized as follows :—

(1) Information as to the life history and habits of fish should be disseminated among the agricultural community.

(2) Catch dams should, where practicable, be provided and used.

(3) All drains and channels leading from any flax dam should be open.

(4) Flax water retained in a catch dam should not be discharged into any waters in which fish life exists until the month of January, except in conditions of flood.

(5) Notification of the completion of retting should be given to the local Board of Conservators.

(6) The discharge of flax water over land should be an alternative method of disposal.

(7) In any case in which neither catch dams nor the flooding of the effluent over land is practicable, advice and direction should be sought from the local Board of Conservators.

(8) The provision as to a minimum penalty should not apply in certain cases.

(9) Cases of peculiar difficulty should be referred for the joint decision of the authorities charged with the administration in Northern Ireland of agriculture and of fisheries.

(10) Power should be conferred upon the Privy Council to exempt certain waters from the operation of the Fishery Laws in relation to flax water offences.

(11) Proof by a defendant of such dilution as rendered the effluent harmless to fish life should be a good defence in case of prosecution.

(12) It should be permissible to ret flax under certain conditions in registered mill races.

(13) The right of any individual to bring an action for an injunction to restrain injury alleged to be due to a flax water offence should be restricted.

(14) The consent of the local board of conservators should be obtained prior to the institution of any prosecution for a flax water offence.

(15) The practice of awarding one-third of the penalty to a private prosecutor or informer should be abolished.

(16) Water bailiffs should be sworn in similarly to police constables.

(17) It should be optional for flax growers or retters to register their retting ponds with the local boards of fishery conservators.

(18) Appeals in flax water cases should be heard by the County Court Judge sitting alone.

(19) A minimum penalty of £1 for the first offence and of £2 for a subsequent offence should be imposed on conviction.

It will be at once apparent that the question of putting into effect the committee's recommendations is in the main dependent upon the obtaining of legislation in the Imperial Parliament—fisheries being temporarily a reserved service. In view of the difficulty of securing such legislation the Ministry, in consultation with the Imperial Secretary, gave the most careful consideration to the possibility of devising some method whereby through the voluntary co-operation of both flax growers and fishery proprietors the spirit of mutual concession envisaged by the report might eventully be realized. With this object in view a leaflet, of which a copy will be found at page 94 of the appendices, was prepared and circulated generally throughout Northern Ireland. In pursuance of the procedure contemplated by the leaflet arrangements have been made for the co-operation of local branches of the Ulster Farmers' Union and local representatives of the various boards of fishery conservators in the giving of advice to farmers regarding flax water disposal. It is hoped that this arrangement will prove to be the means of creating a better feeling between the two industries, and will obviate a repetition of the widespread complaint in past seasons of the vexatious prosecutions of farmers by fishery authorities. The arrangement is naturally of a tentative character and can, if necessary, be adjusted in the light of further experience.

(b) *Potato Industry.*

The period of phenomenal over-production in this industry which caused a glut in the British market was, as might have been expected, followed in Northern Ireland by a decrease in the acreage under potatoes. This decrease amounted to some 5 per cent.

in the year 1923 as compared with the figure for 1922. The yield also of potatoes in 1923 was only 5.6 tons per acre as compared with 7.4 tons in the previous year. There was also a decline in production in England and Wales—our chief market. The natural result of these factors was a more satisfactory price level during the past season.

During the year ended 30th September last some 140,000 tons of potatoes were exported from Northern Ireland, being some 35,000 tons more than in the previous year.

The season of 1924 was not favourable to potato growing in Northern Ireland, the continuous wet proving very injurious to crops in low-lying and badly-drained districts—in other areas, however, the crop was generally satisfactory, and with improved prices now ruling the outlook for the coming shipping season is promising.

Very careful consideration was given by the Ministry, in consultation with the interests concerned, to the advisability and practicability of instituting a scheme of official inspection of all potatoes designed for shipment from Northern Ireland. The benefits to be derived from a system of official certification as to quality, grading, packing, etc., are considerable. It was, however, found impossible to secure the agreement of the producing and distributing interests to a concrete scheme, with the result that further consideration of the proposal had to be postponed.

Experimental Work.

For the purpose of guiding farmers and assisting potato breeders, the Ministry has instituted a series of experiments at the grounds of the Plant Breeding Station, Stormont, Belfast; the North-West Agricultural School, Strabane; the Kilkeel trial grounds; and at various centres in the scheduled area. Full particulars of these experiments will be found at page 20 of the appendices. Opportunities were afforded to all interested persons to become acquainted, by visiting the experimental grounds at Stormont and North-West Agricultural School, Strabane, with the Ministry's activities in this direction.

The results of the trials carried out at these centres in 1923 were published in leaflet form, copies of which may be obtained on application to the Ministry.

With regard to the propagation of new varieties, it is worthy of note that plant breeders are now directing their efforts to secure that all new varieties which they place on the market are immune, and they are adopting the practice of discarding all that prove to be susceptible under test at the trial grounds. This may lead, in the future, to immune varieties only being available for planting purposes.

During the season approximately 110 new varieties were tested for immunity for the guidance of plant breeders

Black Scab in Potatoes.

The attention of the Ministry continues to be closely directed to the safeguarding of the important potato industry of Northern Ireland from the ever present danger of the black scab disease. In the winter of 1923 the Ministry issued the Black Scab in Potatoes (Northern Ireland) No. 2 Order, 1923, of which a copy will be found at page 97 of the appendices, scheduling the townlands of Derrybeg in the Barony of Orior Upper in the administrative county of Armagh, and Levallyclanone in the Barony of Iveagh Upper in the administrative county of Down.

On the whole the provisions of the Orders in force were carefully observed, growers generally co-operating with the Ministry in its efforts to control the spread of the disease. In eight cases, however, the Ministry was obliged to institute proceedings for the removal without licence of potatoes from the scheduled area, and in each case a conviction was secured.

There can now be no room for doubt that the general planting of varieties of potatoes which are immune to black scab is the only adequate means whereby that disease may be eradicated, and the Ministry hopes that growers will realize the very real advantages to be reaped from an extension of the areas under immune varieties.

Immune Varieties and Inspection in Scheduled Area.

Under the Ministry's Black Scab Orders only potatoes of approved immune varieties can be planted in the scheduled area without licence. During the year two new varieties of immune potatoes were added to this approved list, viz., Arran Comrade and Tinwald Perfection, making in all seventeen varieties approved for planting without the issue of licences from the Ministry.

In addition licences were issued for the planting of certain other immune varieties, provided the Ministry was satisfied as to the purity of the seed. Eighty licences were issued, chiefly for the varieties Witch Hill (Resistant Snowdrop) and America.

During the summer of 1924 all crops of potatoes in the scheduled area were inspected, with a view to the issue of purity certificates, and to ensure that only immune varieties were planted. Under this scheme 3,986 certificates were issued, covering an area of approximately 11,000 acres.

In the Lisburn area cases were discovered of non-immune varieties growing in contravention of the Order, and in each case the owners were ordered to have them dug up or destroyed. It was, however, found necessary to institute proceedings in four cases in which convictions were secured.

A number of notices for the removal of " rogues " was issued which were in every case complied with.

Export from Scheduled Area.

The inspection of all potatoes exported from the scheduled area to England and Wales during the 1923-24 shipping season was again carried out, and certificates of quality issued in respect of all consignments passed. Altogether 47,540 tons were inspected, being an increase of 13,400 tons, or approximately 40 per cent. over the exports for the previous shipping season.

Inspection of Growing Crops of Potatoes outside the Scheduled Area.

The scheme of inspection, with a view to the subsequent issue of purity certificates, of growing crops of immune potatoes in areas not scheduled on account of black scab, was again in operation during the year.

A scheme for the inspection of certain non-immune varieties such as Up-to-Date, Arran Chief, British Queen, King Edward 7th, Epicure, May Queen and Duke of York, was also inaugurated.

It may be stated that in order to secure the Ministry's purity certificate a crop must attain the high purity of 99½ per cent.

The scheme of certification was also extended to include crops which, although not up to the standard required for a purity certificate, reached a purity figure of not less than 97 per cent. In such cases certificates were issued which enabled exporters to comply with the provisions of the Seeds Act, 1920, which require that, as regards seed potatoes for general planting in Great Britain, the seller must either state the name of the variety and thereby imply that the standard of purity is not less than 97 per cent., or disclose the fact that the seed is of mixed varieties. A copy of a circular letter issued in this connexion will be found at page 104 of the appendices.

A list of growers of certified crops will be prepared and circulated to those interested, thus indicating to purchasers of seed potatoes the sources where reliable seed may be obtained.

Export from Non-Scheduled Areas.

In compliance with the regulations of those countries which require that imported potatoes must be certified as originating on land free from black scab disease, 267 certificates were issued during the year.

In addition 3,500 tons of potatoes for seed purposes were inspected, at the request of merchants, for export to foreign countries, and certificates as to quality and health issued.

The Potatoes Importation (Ireland) Order, 1920.

Under this Order 119 licences, covering the importation into Northern Ireland of approximately 73 tons of seed potatoes were issued during the period under review.

Colorado Beetle (Northern Ireland) Order, 1923.

In connection with the provisions of this Order which prohibits the landing in Northern Ireland of living plants or vegetables shipped from any port in France except under licence or unless they are accompanied by a declaration to the effect that they were not grown in certain specified districts where Colorado Beetle is known to exist, no notification was received as to the arrival from France of any consignment which did not comply with the regulations.

New Markets.

It was found possible to secure an important modification of the regulations affecting the entry of Northern Ireland potatoes into South Africa. Under former conditions potatoes could not enter that country unless they could be certified as having originated outside a radius of five miles from any case of black scab disease. As a result of the Ministry's representations that certificate may now be dispensed with as regards potatoes from this country, provided it is officially certified that the disease has not occurred on the land on which the potatoes were grown; that the potatoes are free from the disease, and that the only outbreaks of black scab within five miles of the place of origin were trivial.

Inspectors.

For the purpose of enforcing the provisions of the Orders, and to provide for the giving of general advice to growers, fifteen inspectors were employed in the scheduled area. These officers, in addition to carrying out inspections of growing crops in that area, were responsible for the inspection of potatoes exported.

Supply of Seed Potatoes and Seed Oats in Poor Districts.

In the early months of the year 1924 representations were made to the Ministry that serious financial distress prevailed among farmers in certain districts of Northern Ireland. It was stated that, owing to the unfavourable weather which had been experienced, the potato and oat crops had suffered severely, and that in consequence no seed could be saved from these crops; further, it was represented that the position was especially acute in particular areas where the land is poor and the holdings small and where farmers generally, even in favourable years, can do little more than provide themselves with a meagre livelihood.

The Ministry gave prompt attention to these representations, and caused a careful investigation to be made in the various localities in which distress was stated to exist. This investigation showed that in two districts only was the situation really serious, viz., Rosslea and Garrison districts of the county Fermanagh, as the farmers in these localities would not, without help, be able to

provide themselves with seed at the prices which then ruled. The matter received immediate and sympathetic consideration from the Government, who decided to afford assistance in the two districts mentioned.

One hundred and forty-four and a half tons of potatoes of immune varieties and seventeen tons of oats were, accordingly, purchased by the Ministry and, under its supervision, issued at a reduced price through local rate collectors to some 794 applicants. The reduced cost of the seed so supplied is to be repaid in two equal instalments which fall due in January, 1925, and January, 1926, respectively.

10. Forestry.

The total area now available to the Ministry for forestry purposes is 4,423 acres, made up as follows :—

	Acres.
Baronscourt, county Tyrone	2,820
Ballykelly, county Londonderry	254
Castlecaldwell, county Fermanagh	303
Knockmany, county Tyrone	468
Newcastle, county Down	578

During the year the negotiations for the lease of 578 acres at Newcastle, county Down, were completed.

Up to the present 920 acres have been taken over at Baronscourt, and of this area 179 acres consist of young woods already planted when the land was leased. Six hundred and seventy-eight acres have been planted since the acquisition of this centre, viz., 293 acres in the season 1921-22, 174 acres in 1922-23 and 211 acres in 1923-24. It is proposed to plant a further 190 acres in 1924-25.

At Newcastle 62 acres were planted in 1923-24, and it is intended that an additional 73 acres will be planted in 1924-25.

The centres at Baronscourt and Newcastle are held on lease for a period of 150 years from 1st November, 1920, and 1st November, 1923, respectively. The remaining centres, which were purchased under the Irish Land Act, were transferred from the Forestry Commission to the Ministry of Agriculture (Northern Ireland) by an Order of the Joint Exchequer Board, dated 6th March, 1923. The centres at Ballykelly, Knockmany and Castlecaldwell consist of ordinary woods which were taken over by the Irish Land Commission with a certain amount of intervening land. The old woods at Ballykelly and Knockmany are being cleared and replanted. The area planted at these centres during the past year is as follows :—

Ballykelly	12	acres.
Knockmany	19½	,,
Castlecaldwell	19½	,,

The plantations made at the various centres during the past year were in all cases coniferae, the species being Douglas Fir 34.4 per cent., Norway and Sitka Spruce 33.3 per cent., Scots and Corsican Pine, European and Jap Larch, etc., 32.3 per cent.

The Ministry has decided to lease an additional area of 260 acres of suitable land at Baronscourt, and negotiations in the matter are at present in progress.

During the year the attention of the Ministry was directed to the fact that occupiers of holdings purchased under the Irish Land Acts were cutting down trees without having previously obtained the permission of the Ministry to do so. Accordingly, a leaflet was issued to all occupiers of such holdings pointing out that, where the advance for purchase was made after the 3rd December, 1909, the occupier may not cut down or uproot any trees which are necessary for the ornament or shelter of the holding without having first obtained the consent in writing of the Ministry. A copy of this leaflet will be found on page 106 of the appendices.

11. Statistics and Intelligence.

In 1924 the services of members of the Royal Ulster Constabulary were again available for the collection of agricultural statistics. The urban and rural districts were retained as the units of collection, and the complete area was divided into 635 enumeration districts, each of which was placed in charge of a selected constable who was responsible for the collection, during the month of June, of complete statistics regarding the following matters :—

Acreage under crops, pasture, fruit, woods, etc.
Numbers of live stock.
Number of farms extending into more than one enumeration district.
Number of persons holding more than one farm.
Acreage under the different classes of fruit.
Acreage for grass seed production.
Acreage under the principal varieties of potatoes.
Numbers of milch cows and heifers in calf according to breeds.
Births of foals, calves, lambs, and pigs.
Deaths amongst cattle from specified diseases.
Deaths amongst horses, cattle, sheep and pigs from all causes.
Quantity of honey and wax produced.
Number of persons engaged in agriculture.
Number of scutching mills, corn mills, and malt houses.
Particulars regarding forestry operations.
Number of holdings according to size.

At the request of the Ministry enumerators with previous experience of the work were, as far as practicable, entrusted with the task of collecting the statistics, and as a consequence the collection was more rapidly and more efficiently carried through than

in 1923, when the great majority of the enumerators had had no previous experience of the work. In future years it is believed that the experience and knowledge of the districts gained by the enumerators will enable the agricultural statistics for Northern Ireland to be collected with a minimum of delay.

The change from the method of compilation followed in the years 1919 to 1922, when our agricultural statistics were based on returns received direct from farmers, to the system of enumeration by members of the Royal Ulster Constabulary necessitated a continuance of the two systems of collection concurrently for a period of at least two years in order to form an opinion regarding the normal divergency between the figures obtained under each system. Farmers, therefore, in 1924, were again requested to furnish the Ministry direct with particulars as to the areas under crops and the numbers of live stock on their holdings as at 1st June. The information now available regarding the comparability of the results obtained under the two systems will, it is hoped, enable the Ministry to effect the necessary revision of the published statistics for the years 1919 to 1922. The figures which appear in the appendices to this Report (p.) are the results of the complete enumeration carried out by the police in the years 1923 and 1924, and discrepancies, therefore, occur between the figures for 1923 now published and those issued in the Report for last year, which were compiled from returns received direct from farmers.

Yield of Crops.—In addition to the statistics referred to above the police also collect, for each enumeration district, particulars of the average yield per statute acre of the principal crops. Inquiries are made as follows :—

(1) Yield of the hay crop and weight of grass seed saved per acre.
(2) Yields of wheat, oats, barley, beans, potatoes, cabbages and vetches.
(3) Yields of turnips, mangels, carrots, parsnips, and flax (scutched).

These returns, which cover a large percentage of the farms in Northern Ireland, are used for estimating the total production of the principal cereal, root and hay crops.

The police also collect, for each Royal Ulster Constabulary subdistrict, details of the wages and conditions of employment of agricultural workers.

Other Statistical Inquiries.—Reports regarding the following matters are also obtained through various sources :—

Prices of live stock at fairs.
,, ,, agricultural produce at markets.
Numbers and weights of pigs purchased for bacon curing.
Stocks and production of fertilisers and manures.

Creamery trading.
Retail prices of agricultural seeds, feeding stuffs and manures.
Con-acre lettings.

Intelligence.

The Intelligence Branch maintains a regular communication and exchange of publications with agricultural departments, schools and research institutes in Great Britain, the colonies and foreign countries. By this means full details are obtained regarding the progress and development of agriculture abroad. This information is of special value to the Ministry in connection with its research schemes, since the extensive scale on which agricultural research is conducted to-day renders the task of co-ordination exceptionally difficult, and makes it all the more necessary to pay increasing regard to the work which is being carried on at other research stations and experimental farms. A knowledge of the general agricultural experience of other countries is also often of value to the Ministry when dealing with the administrative problems which arise at home.

Another important aspect of the intelligence work of the Ministry is the dissemination of information amongst the general agricultural community in Northern Ireland. Agriculture is an industry which depends intimately on the results of research, and the Ministry recognizes that these results should be as widely known as possible and easily accessible to the ordinary farmer. Through the medium of the Press, the outdoor staff of the Ministry, the county committees of agriculture and their staffs, every effort is made to bring important developments relating to the industry to the notice of agriculturists.

During the year the following leaflets were issued :—

Flax Seed, 1924 (Revised).
Flax Variety Trials, 1923.
Cheesemaking on the Farm.
Suitable Varieties of Fruit.
The Feeding of Dairy Cows.
Home Bottling of Fruit and Vegetables.
Marketing of Stale or Bad Eggs.
Phosphates and Improvement of Pasture.
Potato Experiments, 1923.
Farmers and the Income Tax.
Egg-laying Tests, 1923.

Numerous individual inquiries from farmers regarding various aspects of agriculture were also received and attended to.

The reference library has been still further enlarged and now contains several thousand publications.

The usual report on agricultural conditions prevailing in Northern Ireland was issued each month.

Market Intelligence.

At the request of the large majority of the creameries in Northern Ireland it was decided to continue during the year 1924-25 the butter market intelligence scheme originated in 1922. Certain modifications, however, of the original scheme, which it was felt would enhance the value of the information given in the daily report, were introduced. All participating creameries are, through a system of daily reports, afforded early and reliable information regarding prices and conditions actually obtaining in the principal British markets. Forecasts regarding the probable trend of markets are also given, based on information obtained from various sources. In addition, the Danish F.O.B. price is wired to creameries on Tuesdays and Fridays, while particulars of the Copenhagen official quotation are issued every Thursday.

Census of Production.

A Census of Production is being taken in Great Britain in 1925, in respect of the year 1924. The Cabinet has decided to take a similar census in Northern Ireland, and the preparatory arrangements are now well advanced. This Ministry is responsible for the collection and summarization of the statistics necessary for the output of the agricultural industry to be calculated. This information will be of very great value when dealing with questions relating to agriculture but, if the census is to attain that measure of completeness which is desired, it will be necessary to make a considerable number of enquiries supplemental to the ordinary returns collected in June. The Ministry, therefore, trusts that farmers and other persons connected with the agricultural industry will render whole-hearted co-operation in making the census a success.

The Ministry desires to place on record its indebtedness to the Royal Ulster Constabulary, to the individual farmers who voluntarily supplied returns, and to the other agencies utilised in the collection of statistics for the very valuable assistance rendered during the year.

12. Surveys.

Ordnance Survey.

During the year under review the most interesting development in connection with the Ordnance Survey service of Northern Ireland was the establishment of printing facilities at the Survey Office, Belfast. As has been mentioned in previous reports the absence of printing equipment necessitated considerable recourse to the Ordnance Survey Office, Southampton, for copies of publications relating to the Northern Ireland service. The Director General at Southampton has, in this connection, greatly facilitated the work of the Northern Ireland survey, but the establishment of the Belfast office as a practically independent unit for the purpose of printing is a matter for satisfaction.

The first map prepared and printed in its entirety by the Northern Ireland Survey was published during the past year. It consists of a revised administrative map of the six counties showing the county boundaries, urban unions and rural districts, baronies and district electoral divisions.

A revised map of the city of Belfast on the scale of six inches to the mile was also prepared and published, but, as at the time of its preparation the printing equipment at the Belfast office was not completed, the map was necessarily printed at Southampton. This map is published in a popular coloured form and sold at the very low price of 3/-, which includes a street index.

Field Work.—The revision of the 25 in. scale plans of county Londonderry again mainly occupied the attention of the Field Staff. 85,798 acres were revised and 118¼ miles were re-levelled in that county.

Boundary Survey.—The arrears of the boundary survey in the counties Antrim and Londonderry were completed under the special arrangement by which the Ordnance Survey Office continues the work formerly executed by the chief boundary surveyor. Owing to the fact that no boundary survey work was conducted from the end of the year 1921 to September, 1923, the arrears in question were considerable.

Drawing and Printing.—In the drawing office new 6 in. and 25 in. scale plans of the county Antrim were prepared and new editions and re-prints were obtained. In all some 27,500 acres were re-drawn on the 25 in. scale and some 66,000 acres on the 6 in. scale were corrected. Although the general revision of the 6 in. scale map is suspended, essential revisions are made.

As the printing equipment was not finally completed until towards the close of the period under review no considerable reprinting at Belfast was possible. Over 400 copies, however, of new editions and re-prints were made there.

Stocks and Sales.—A stock of the various publications relating to the Ordnance Survey of Northern Ireland sufficient to meet normal demands has been maintained, and, in addition, a stock of uncoloured townland indexes has been secured. Under the arrangement already referred to over 17,000 re-prints were procured at cost price from the Director General of the Southampton Department.

Over 10,000 maps, of a net value of nearly £1,400, were sold to various Government departments and to the public.

Manuscript Documents.—The transfer from Dublin to Belfast of the various manuscript documents relating to surveys in Northern Ireland has, in the main, been completed, although certain outstanding matters are still the subject of correspondence.

The documents transferred include the records of the work done by the Northern Ireland survey in connection with the functions of the Land Judges' Courts.

Existing Plates.—On the provision at the Survey Office, Belfast, of adequate storage facilities, nearly 4,000 printing plates were transferred from Southampton. This transfer comprises the bulk of the plates which are the property of the Northern Ireland Survey, the residue of which will, in due course, be transferred in their entirety to Belfast.

Contracts with Agents.—New contracts between the Ministry and the various agents appointed originally by the Ministry of Agriculture and Fisheries, London, for the sale of Ordnance Survey publications of Northern Ireland, have been completed, and the public throughout the six county area is by this means provided with local facilities for the procuring of Ordnance Survey maps, etc.

Geological Survey.

A supply of uncoloured geological maps on a scale of 1 in. to one mile has been printed at Southampton and added to the stock at the Belfast Survey office. Coloured copies of these maps can, if required, be prepared from the coloured standards which are in the possession of the Ministry.

I have the honour to be,

Your Grace's faithful Servant,

JAMES S. GORDON,
Secretary.

E. M. ARCHDALE,
Minister.

MINISTRY OF AGRICULTURE,
WELLINGTON PLACE, BELFAST.
April, 1925.

INDEX TO APPENDICES.

	PAGE
APPOINTMENT OF COUNTY COMMITTEE OF AGRICULTURE	1
Officials of County Committees of Agriculture	2
ACCOUNTS	3
Parliamentary Grants	3
Suspense Accounts	6
Loan Accounts	7
Table showing Contributions from Local Rates and Ministry towards Agricultural Schemes	7
Table showing Expenditure on Agricultural and Live Stock Schemes by County Committees of Agriculture	8
SPECIAL EXPERIMENTS	9
Baby Beef Experiments	9
Scheme of Agricultural Experiments	10
MARKETING AND TRANSIT OF PRODUCE	21
Specification of Packing Cases for Poultry	21
Preparation and Packing of Poultry for Cross-Channel Markets	23
Marking of Butter Packages	26
AGRICULTURAL SCHEMES	29
Egg Laying Tests—Rules	30
,, ,, ,,... 1923-24—Results	35
Horticultural Experiments	41
Cow-testing Associations	44
Horse Breeding Scheme, 1924	50
AGRICULTURAL LAWS	52
Live Stock Breeding Act (Northern Ireland), 1922	52
Weeds and Agricultural Seeds (Ireland) Act, 1909	55
Fertilizers and Feeding Stuffs Act, 1906	55
Report on the Northern Ireland Egg Industry	58
The Marketing of Eggs Act (Northern Ireland), 1924	69
The Marketing of Eggs (Northern Ireland) Rules, 1924	74
Marketing of Eggs Act (Northern Ireland), 1924, Circular to Egg Merchants, No. 170	87
Circulars re Marketing of Eggs Act and Marketing of Eggs	89
Marketing of Stale or Bad Eggs Leaflet	91
FLAX AND POTATO INDUSTRIES	94
Flax Water Leaflet (issued jointly by the Ministry of Agriculture and the Imperial Secretary's Department, Northern Ireland	94
Black Scab in Potatoes (Northern Ireland) No. 2 Order, 1923	97
Circular No. 153. (Inspection of Potato Crops)	104
FORESTRY	106
Restrictions on the cutting down of trees	106
STATISTICS AND INTELLIGENCE BRANCH	107

A.1373/23. 3rd May, 1924.

Appointment of County Committee of Agriculture.

Sir,

I am desired by the Minister of Agriculture to state, for the information of the Council, that the existing Committee of Agriculture for County ..... will cease to hold office on the day on which the election of the new County Council takes place. Accordingly, at the first meeting of the newly-elected County Council one of the items on the Agenda should be " to appoint a Committee of Agriculture under Section 14 of the Agricultural and Technical Instruction (Ireland) Act, 1899."

For the information of the Council, I have to enclose a statement giving particulars of the number of meetings held by the present County Committee in the period of three years ended the 31st March last, and the average number of members in attendance.

Under Section 78 (2) of the Education Act (Northern Ireland) the Ministry is empowered to limit the number of members to be appointed on a County Committee. The Ministry does not, however, for the present intend to take action under this Section, but it is hoped that the County Council will consider the desirability of appointing a small Committee as being likely to result in greater uniformity and increased efficiency and expedition in the administration of County Schemes. The Ministry ventures to suggest, for the consideration of the Council, the appointment of a Committee whose number will not exceed the number of elected members on the County Council, the Committee comprising both Members of the Council and outside persons, with the Councillor Members in a majority of at least one.

The Ministry also recommends that the Committee should be appointed for the full term of the existence of the County Council, i.e., three years, and that each rural district should be represented on the Committee.

The Ministry would suggest, further, that the Council should (a) make it a condition that a member of the Committee shall *ipso facto* cease to hold office if absent without reasonable cause from four consecutive meetings of the Committee, but shall be eligible for re-election by the County Council; (b) instruct the Committee to appoint a Chairman and Deputy Chairman, and (c) require the Secretary of the Committee to submit to the Council, at least one month prior to the date fixed for the next election of the County Council, a return of the number of meetings held and the number of attendances of each member of the Committee.

I have to request that you will be good enough to bring this letter before your Council at their first meeting, and that you will

subsequently forward to these offices on the enclosed form a list of the names, etc., of the members of the newly-appointed Committee.

I am, Sir,
Your obedient Servant,
J. V. COYLE.

To the Secretary of each County Council in Northern Ireland.

Officials of County Committees of Agriculture.

ANTRIM :—

Chairman:	...	J. S. F. M'CANCE, D.L., J.P., Woodburn, Dunmurry.
Vice-Chairman:	...	THOMAS MACAFEE, J.P., Currysiskin Ho., Ballymoney.
Secretary:	...	A. B. CLARKE, B.A., County Courthouse, Belfast.
Instructors:	...	P. T. O'HARE, A.R.C.Sc.I. (Agriculture).
		R. D. MACKAY, N.D.A., N.D.D. (Hons), (Agriculture).
		W. R. SAUNDERSON (Horticulture and Bee-keeping).
		Miss A. M. NEDWILL (Poultry-keeping and Butter-making).
		TAYLOR BARNES (Instructor in Potato Growing).
		P. M'HUGH (Agricultural Overseer).
		J. M'DOWELL (Agricultural Overseer).

ARMAGH :

Chairman:	...	J. J. W. DUNLOP, Rosemount, Annaghmore, Portadown.
Vice-Chairman:	...	ROBERT R. MURPHY, J.P., Lislea, Keady.
Secretary:	...	R. T. HUSTON, M.R.C.V.S., Dean's Bridge, Armagh.
Instructors:	...	J. BRADSHAW (Agriculture).
		J. HAGAN (Horticulture and Bee-keeping).
		J. SCRIMGEOUR (Horticulture and Bee-keeping).
		Miss S. E. NEDWILL (Poultry-keeping and Butter-making).
		H. M'CLEAN (Agricultural Overseer).

DOWN :—

Chairman:	...	JAMES IRELAND, J.P., Ivyholme, Lessans, Saintfield.
Vice-Chairman:	...	GEORGE WALLACE, J.P., Lakeview, Corbet, Banbridge.
Secretary:	...	A. J. MORROW, 2 Avonmore Terrace, Balmoral, Belfast.

Instructors: ... R. W. Dickson, A.R.C.Sc.I. (Agriculture).
G. Davidson, N.D.A., N.D.D. (Agriculture).
T. Scott (Horticulture and Bee-keeping).
D. W. Baillie (Horticulture and Bee-keeping).
Miss W. M'Mullan (Poultry-keeping and Butter-making).
Miss L. Walters (Poultry-keeping and Butter-making).
V. Boyce (Agricultural Overseer).
J. G. Jamieson (Agricultural Overseer).

Fermanagh :—

Chairman: ... Rev. Canon Hall, Garvary, Enniskillen.

Vice-Chairman: ... John E. F. Collum, H.M.L., J.P., Bellevue, Enniskillen.

Secretary: ... W. H. West, Courthouse, Enniskillen.

Instructors: ... D. T. Ritchie, A.R.C.Sc.I., N.D.A. (Agriculture).
P. Brock (Horticulture and Bee-keeping).
Miss M. J. O'Hanlon (Poultry-keeping).
J. J. M'Ferran (Agricultural Overseer).
T. C. Skelly (Agricultural Overseer).

Londonderry :—

Chairman: ... A. L. Clark, J.P., Moyola Lodge, Castledawson.

Secretary: ... T. K. Caldwell, Courthouse, Coleraine.

Instructors: ... D. R. Aiken, A.R.C.Sc.I., (Agriculture).
A. M'L. May (Horticulture and Bee-keeping).
Miss A. Breslin (Butter-making).
Miss G. M'Lean (Poultry-keeping).
E. Graham (Agricultural Overseer).
A. J. M'Farland (Agricultural Overseer).

Tyrone :—

Chairman: ... John Johnston, Mountjoy East, Omagh.

Vice-Chairman: ... Thomas Hegan, J.P., Desertcreat, Tullyhogue.

Secretary: ... W. Walsh, Courthouse, Omagh.

Instructors: ... E. S. Daly, A.R.C.Sc.I., (Agriculture).
W. J. Patterson, A.R.C.Sc.I., N.D.A. (Agriculture).
P. H. R. Anderson, B.Sc. (Agr.), (Agriculture).
S. J. Magill (Horticulture and Bee-keeping).
Miss L. Aiken (Poultry-keeping).
P. Dolan (Agricultural Overseer).
J. M. Flanagan (Agricultural Overseer).

ACCOUNTS.

Account of Parliamentary Grants in the Year ended 31st March, 1924.

Vote Class V. No. 1, Ministry of Agriculture.

(Moneys voted by Parliament to defray the Salaries and Expenses of the Ministry.)

RECEIPTS.	£	s	d
Parliamentary Grant ...	58,707	0	0
Appropriations-in-aid ...	224	1	0
Total	£58,931	1	0

EXPENDITURE.	£	s	d
Salaries, Wages and Allowances ...	39,746	1	1
Travelling, Subsistence and Removal Expenses	3,994	18	0
Rent, Rates, Maintenance, Furniture and Fittings ...	586	16	9
Lighting and Heating ...	192	17	2
Printing ...	1,699	19	3
Stationery and Office Supplies ...	435	3	0
Law Charges ...	4	8	10
Postage, Telegrams and Telephones ...	1,679	1	6
Incidental Expenses ...	704	2	4
Special Services ...	475	12	5
Special Inquiries ...	353	19	5
Collection of Agricultural Statistics ...	2,798	14	4
Miscellaneous ...	496	5	5
Balance on 31st March, 1924 (to be surrendered) ...	5,763	1	6
Total	£58,931	1	0

Account of Parliamentary Grants in the Year ended 31st March, 1924.

Vote Class V. No. 2, Ministry of Agriculture.

(Moneys voted by Parliament to defray the expenses of the Ministry in respect of Agricultural Institutions, Improvement of Live Stock, Agricultural Research Development, including Sundry Grants-in-aid.)

RECEIPTS.	£	s	d
Parliamentary Grant ...	49,666	0	0
Appropriations-in-aid ...	25,054	1	7
Total	£74,720	1	7

EXPENDITURE.	£	s	d
Agricultural Research ...	8,578	2	5
Agricultural Education (a net subhead) ...	18,021	10	8
Improvement of Live Stock ...	4,941	3	11
Live Stock Breeding Acts ...	778	5	11
Grants to County Committees ...	22,631	1	5
Grants to Agricultural Societies, etc. ...	2,589	12	0
Flax and Potato Industries ...	1,588	0	7
Dairying Industry ...	202	4	1
Stormont Farm ...		—	
Quarantine Station ...	1,780	17	11
Compensation for Loss to Contractor ...	600	0	0
Forestry ...	2,773	4	8
Balance on 31st March, 1924 (to be surrendered) ...	10,235	18	0
Total	£74,720	1	7

Account of Parliamentary Grants in the Year ended 31st March, 1924.

Vote Class V. No. 3, Ministry of Agriculture.

(Moneys voted by Parliament to defray the salaries and Expenses of the Ministry in respect of Ordnance Survey and Geological Survey.)

RECEIPTS.	£	s	d
Parliamentary Grant ...	10,166	0	0
Appropriations-in-aid ...	1,866	3	3
Total	£12,032	3	3

EXPENDITURE.	£	s	d
Ordnance Survey ...	8,838	14	6
Geological Survey ...	28	10	1
Balance on 31st March, 1924 (to be surrendered) ...	3,164	18	8
Total	£12,032	3	3

Suspense Accounts in the Year ended 31st March, 1924.

	Balance on 1st April, 1923.	Receipts in 1923-24.	Payments in 1923-24.	Balance on 31st March, 1924.
Exchequer Extra Receipts	—	71 15 0	71 15 0	—
Income Tax deducted from salaries	654 8 9	2153 18 6	1894 11 11	913 15 4
Veterinary Services	127 14 5	--	127 14 5	—
Cost of living bonus, recouped to County Committee of Agriculture and Technical Instruction and repayable by the Ministry of Education (Northern Ireland)	*43 11 10*	102 0 4	69 16 6	*11 8 0*
Insurance, Live Stock	5 1 11	124 0 0	128 10 10	0 11 1
Loans, Live Stock	—	63 6 8	63 6 8	—
Quarantine Station	—	572 15 5	572 15 5	—
General	15 0 0	98 18 5	121 10 11	*7 12 6*
Law Charges	—	5 12 2	6 0 6	*0 8 4*
Purchase of Bulls	—	96 13 4	155 2 4	*58 9 0*
TOTAL	758 13 3	3288 19 10	3211 4 6	836 8 7

Summary of Loans Accounts on 31st March, 1924.

Nature of Loan.	Loans outstanding on 31st March, 1923		Loans issued in 1923-24.		Principal repaid in 1923-24.	Interest received in 1923-24.	Loans outstanding on 31st March, 1924	
	No.	Amount.	No.	Amount.			No.	Amount.
		£ s d		£ s d	£ s d	£ s d		£ s d
For the purchase of stallions	8	446 13 9	7	502 12 11	89 6 9	17 10 5	15	859 19 11
For the purchase of stallions	2	*77 6 8	—	—	61 6 8	6 6 6	1	*16 0 0
For the purchase of agricultural implements, etc.	17	*897 10 0	—	—	828 15 3	66 9 1	3	*68 14 9
Total	27	1,421 10 5	7	502 12 11	979 8 8	90 6 0	19	944 14 8

*These amounts represent outstanding balances of loans granted by the Department of Agriculture and Technical Instruction to farmers in Northern Ireland, prior to the transfer of Northern Ireland Services.

Repayment instalments on all loans for agricultural purposes are effected to the Loans Repayment Account of the Government of Northern Ireland.

Table showing by Counties the amounts contributed from Local Rates, and the amounts contributed by the Ministry for the purpose of Agricultural Schemes under local Statutory Committees during the year ended 31st March, 1924.

COUNTY.	Rate in the £.	Total Produce of the Rate.	†Contributions from the Ministry.			Contributions from Local Rate.
			General Grant.	Agricultural Classes Grants	Total.	
	d	£	£	£ s. d.	£ s. d.	£ s. d.
Antrim	¾	1,925	*4,815	51 10 8	4,866 10 8	1,681 0 0
Armagh	¾	1,110	2,341	22 6 0	2,363 6 0	1,112 0 0
Down	1	2,876	4,006	120 19 2	4,126 19 2	1,439 3 11
Fermanagh	1	950	2,201	5 10 8	2,206 10 8	600 0 0
Londonderry	1	1,216	2,519	145 16 0	2,664 16 0	913 11 3
Tyrone	1	1,750	3,588	62 14 2	3,650 14 2	1,354 16 4
			19,470	408 16 8	19,878 16 8	7,100 12 6

*This includes a grant-in-aid of £1,000 in respect of Greenmount Agricultural College.

†Sums amounting to £3,752 4s. 9d. recouped to the County Committees by the Ministry in respect of cost-of-living bonus of whole-time Officers and of salaries of Itinerant Instructors in Agriculture are not included.

Table showing Expenditure on Agricultural and Live Stock Schemes by County Committees of Agriculture during the year ended 31st March, 1924.

County	Itinerant Instruction in Agriculture	Winter Argicultural Classes	Horticulture and Bee-keeping	Poultry-keeping	Butter-making	Live Stock	Subsidies to Shows	Miscell-aneous allocations	General Adminis-tration	Scholarships	TOTALS
	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
Antrim	506 12 8	58 13 4	652 8 9	598 13 1 (a)	—	1,912 13 4	338 6 8	538 17 8 (b)	591 8 11	1,457 4 5 (c)	6,654 18 10
Armagh	540 15 0	160 19 6 (d)	579 9 3	438 2 11 (a)	—	534 17 2	143 3 8	—	525 16 4	—	2,923 3 10
Down	819 16 10	91 9 3	639 10 0	778 12 7 (a)	—	1,621 5 9	394 17 6	73 0 7 (e)	583 15 5	205 0 0	5,207 7 11
Fermanagh	410 11 11	—	244 2 8	477 14 3 (a)	—	622 0 0	72 8 4	89 14 4 (f)	282 13 7	15 15 0	2,215 0 1
L'donderry	480 19 7	56 5 2	315 15 11	475 12 0	266 15 11	964 6 7	114 9 10	15 16 5 (e)	528 9 10	266 12 6	3,485 3 9
Tyrone	953 18 2	103 6 4	315 6 9	486 13 8 (a)	—	1,580 5 4	249 0 0	30 17 4 (e)	739 1 3	312 17 6	4,771 6 4
Total	3,712 14 2	470 13 7	2,746 13 4	3,255 8 6	266 15 11	7,235 8 2	1,312 8 2	748 6 4	3,251 5 4	2,257 9 5	25,257 0 9

(a) Includes Butter-making.
(b) (1) For Agricultural Overseer £202 3 8
(2) For Seed Potato Scheme 244 15 7
(4) For Cow-testing Associations 77 1 0
(3) For Cottage Prize Scheme 14 17 5
(c) Upkeep of Greenmount Agricultural College.
(d) Includes £109 13s. 11d. for Lectures in Veterinary Hygiene.
(e) For Cow-testing.
(f) For Cottage Prize Scheme.

"Baby" Beef Experiment.

Object.

To obtain information as to the possibilities of feeding for early maturity, i.e., the production of "Baby" beef.

Experiment.

The experiment will include three lots of calves as follows :—

Lot 1.—Calves fed for sale as stores at one year old.
Lot 2.—Calves fed for sale as stores at one year old.
Lot 3.—Calves fed for sale as beef at one year old.

Conditions.

All calves to be, as nearly as possible, the same weight and the same age. If possible their breeding should be known. They should be well bred, and they should also be by the same bull and selected from calves born preferably in March or in April, or, if that is not possible, from calves born in May. It is desirable that all the animals in the experiment should be bullocks, but if this is not possible, the sexes must be evenly balanced.

The minimum number of calves in each lot is to be 2 and, as it is essential that the calves should be of as uniform type as possible, the maximum number should not exceed 4 in each lot.

All calves to be sold when from 12 to 15 months old, preferably the earlier age. The actual weight of each animal must be obtained before sale.

Feeding.

All the calves are to be fed similarly until they are weaned at from five to six months old. At the time of weaning the calves must be weighed and divided into three lots as evenly balanced as possible. For the remainder of the experimental period each lot is to receive as much hay, or hay and straw, and turnips as the animals can consume. The additional feeding will be as follows :—

Lot 1—is not to receive any concentrated food.

Lot 2—(stores) is to receive an allowance not exceeding 1 lb. per head per day of bruised oats.

Lot 3—is to receive a mixture of bruised oats and linseed cake mixed in equal proportions by weight.

The concentrated food for Lot 3 should commence with about 1 lb. per head per day and should be increased according to the manner in which the animals thrive. It must not, however, exceed a maximum of 6 lb. per day. It will be found in practice that the daily allowance can fairly rapidly be increased. A careful record must be kept of the concentrated food consumed by Lots 2 and 3.

All the animals should be given as much water as they will drink.

Scheme of Agricultural Experiments, 1923-24.

Before commencing field experiments and demonstrations each year, the Agricultural Instructor should submit to the County Committee and the Ministry his plans for the work, showing the number and variety of the experiments and demonstrations he proposes to conduct, and the estimated cost in detail of the seeds, manures, and accessories required.

When his proposals have been approved by the County Committee and the Ministry, the Instructor should, on behalf of the Committee, order the seeds and manures in the requisite quantities. The Instructor must not, of course, obtain goods for which the Committee are liable for payment, without having previously obtained authorisation from the Committee. He should take every precaution to ensure that the seeds and manures are of the kinds specified in the Scheme, and that the prices charged are not in excess of current market rates. The merchants' accounts should be carefully examined by him, and certified as to their accuracy before they are presented to the County Committee for payment.

In order that as accurate results as possible may be obtained, an Instructor should not arrange for a greater number of experiments than he can thoroughly oversee. The Instructor is required to devote his personal supervision to the selection of land, the laying out of the plots, the sowing of the seeds and manures, and the harvesting and weighing of the produce.

Returns in connection with the experiments of each class on the several crops dealt with should be furnished to the Ministry on the forms supplied for the purpose, immediately after the necessary weighings have been completed on all the plots of any one class from which reliable results can be obtained.

The dates before which the reports dealing with experiments with the different crops must reach the Ministry are as follows :—

Meadow Hay	30th September.
Potatoes	8th November.
Mangels	15th November.
Turnips	21st December.
Grain	31st December.

The Ministry should be duly informed of the failure of any experiment.

The Instructor should submit to the County Committee, as soon as possible after the completion of his experimental work each season, a report on the results obtained during the season, so that the Committee may, after the Report has been reviewed by the Ministry, have it published and circulated among farmers prior to the commencement of the following season's field operations.

No change may be made in any of the experiments as given below, but the Instructor may include such additional plots as local conditions render advisable. *In the variety tests, Instructors are required to include all the varieties specified in each list.*

A.—*Demonstration Plots.*

Demonstration plots, which are intended to serve as object-lessons to farmers in the cultivation, manuring and seeding of land, etc., should be established in every part of an Instructor's district. The plots should, as far as possible, be placed on prominent sites near main roads.

The undermentioned demonstrations will be found to be useful generally :—

Application of Phosphates to Pasture.
Application of Liquid Manure to Hay.
Catch Crops.
Spraying of Potatoes.
Spraying of Charlock.
Varieties of different crops.
Liming of Land.
Sprouting of Seed Potatoes.
Sowing of Wild White Clover.
Sowing good mixtures of seed especially in seed saving districts.

It should be noted that both seeds and manures may not be supplied for the same experiment or demonstration, except in the case of Phosphates applied to wild white clover plots.

Demonstration plots should not exceed one-quarter statute acre in area.

Experiments and demonstrations should be labelled so that an ordinary observer may be able easily to ascertain what they are intended to show. One label will suffice for each demonstration plot, but in the case of an experiment which includes several plots a larger label stating the general character of the experiment should be erected in addition to the smaller labels giving particulars with respect to each of the plots included in the experiment. The labels should be capable of resisting the weather.

Meetings of farmers should be arranged at experiment or demonstration plots, located at suitable centres, during the summer months, to afford Instructors an opportunity of discussing the plots, varieties, manurial mixtures, methods of cultivation, etc., with farmers in the neighbourhood.

B.—Scheme of Field Experiments.

I.—*Oat Crop* (Variety Test).

Size of each plot—not less than one-eighth or more than a quarter of a statute acre.

(a) *White Oats.*

The following varieties to be tested :—

1. Record,
2. Victory.
3. Crown.
4. Potato.
5. Any other varieties of white oats.

(b) *Black Oats.*

The following varieties to be tested :—

1. Black Tartary.
2. Sir Douglas Haig.
3. Supreme.
4. Any other varieties of black oats.

II.—*Oat Crop* (Charlock Spraying Test).

The object of this experiment is to obtain accurate data regarding the increase in yield in the oat crop when sprayed to destroy charlock.

Size of each plot—not less than one-eighth or more than a quarter of a statute acre.

No. of Plot.

1. Sprayed at the rate of 60 gallons per statute acre with a 3 per cent. solution Copper Sulphate.
2. Unsprayed.

N.B.—The spray should be applied when the plants are not more than four inches high, i.e., long before they reach the flowering stage.

III.—*Barley Crop* (variety test).

Size of each plot—not less than one-eighth or more than a quarter of a statute acre.

The following varieties to be tested :—

1. Archer x Spratt 37/6.
2. Archer x Goldthorpe 4/5/1.
3. Goldthorpe x Spratt 18/1.
4. Any other varieties.

IV.—*Wheat Crop* (Autumn Variety Test).

Size of each plot—not less than one-eighth or more than a quarter of a statute acre.

The following varieties to be tested :—

1. Iron.
2. Squarehead Master.
3. Victor (Garton).
4. Yeoman.

V.—*Wheat Crop* (Manurial Test).

Size of each plot—not less than one-eighth or more than a quarter of a statute acre.

No. of Plot.

1. Dressed in March with either (1) Nitrate of Soda at the rate of 1 cwt. per statute acre, or (2) Sulphate of Ammonia at the rate of $\frac{3}{4}$ cwt. per statute acre,

No. of Plot.

2. Dressed in March with Chloride of Ammonia at the rate of 65 lb. per statute acre.
3. No dressing applied.

N.B.—The plots should not be selected until spring, at a time when the crops are neither very forward nor unduly backward.

VI.—*Turnip Crop* (Variety Test).

Size of each plot—four drills full length of field.

The following varieties to be tested :—

Swedes.

1. Magnum Bonum (Suttons).
2. Supreme (Hogg and Robertson).
3. Magnificent (Garton).
4. Incomparable Green Top (Garton).
5. Up-to-date (Suttons).
6. Tipperary (Carter).
7. Model (Garton).
8. Any other varieties.

VII.—*Mangel Crop* (Variety Test).

Size of each plot—four drills full length of field.

The following types to be tested :—

1. Yellow Globe.
2. Yellow Intermediate.
3. Red Intermediate.
4. Long Red.
5. Any other varieties.

VIII.—*Potato Crop* (Variety Test).

Size of each plot—one-fortieth of a statute acre.

(a) *Maincrop.*

1. Up-to-date.
2. Tinwald Perfection.
3. Majestic.
4. Rhoderick Dhu.
5. Lochar.
6. Kerr's Pink.
7. Arran Victory.
8. Any other varieties.

(b) *Mid-season.*

1. British Queen.
2. Great Scot.
3. Arran Comrade.
4. Edzell Blue.
5. Any other varieties.

The varieties in the Mid-season test should be lifted and weighed by the 1st September.

If possible each plot to consist of 3 drills and weights are to be taken from centre drills, but in no case must less than 2 drills be planted.

IX. *Rotation experiment to ascertain the residual effect of the Nitrogen and Organic Matter collected by Wild White Clover.*

Experiment to start with the sowing of the seeds mixture.

Number and size of plots. The plots to be not less than ¼ statute acre, but if possible they should be larger.

A field that is not intended to remain in pasture for more *than four years should* be selected.

Plot 1. An ordinary seeds mixture containing one pound of wild white clover.

,, 2. The same seed mixture containing one pound ordinary white clover instead of the wild white clover.

The first year's hay crop on each plot is to be weighed in 1924. Should the field be reserved for hay the second year, the yield on each plot should be determined.

When the field is broken up the crops on at least one-tenth of an acre of each of the two plots are to be weighed throughout the course of the rotation. Samples of the grain and straw from any cereal crop are to be drawn from each plot.

At the commencement of the experiment samples of soil will be taken from each plot for nitrogen determinations. Immediately before the pasture is ploughed for oats, fresh samples will be taken with a view to ascertaining the amount of nitrogen collected. When the rotation has been completed, final samples will be drawn.

Note :—It is desirable that either at the time of sowing the grass seeds or, alternately, after the harvesting of the nurse crop, a dressing equivalent to 5 cwt. per acre of high-grade basic slag should be given to both plots. Under no circumstances should a nitrogenous manure be applied to the hay crops.

It is important that soils of poor or average quality should be selected. Neither very fertile soils nor peaty soils should be chosen, as the object of the experiment is to ascertain the effect of the organic matter and nitrogen collected, it is essential that no nitrogenous fertilisers or farmyard manure should be applied to any crop in the rotation.

X.—*Liquid Manure Experiments.*

(a) On First Crop Hay or Old Meadow, preferably the former.

Size of each plot—one-sixteenth of a statute acre (for small farms each plot may be one-fortieth of a statute acre).

The following kinds and quantities of manures should be applied per statute acre :—

No. of Plot.

1. No manure.
2. 16 tons Farmyard Manure, applied before 15th February.
3. 16 tons Liquid Manure, applied one-half in February and one-half in April.
4. 1 cwt. Nitrate of Soda applied during second half of March.
   2 cwt. Superphosphate 35%.
   2 cwt. Kainit.

   Applied before 15th February.

(b) On Cabbages.

No. of Plot.

1. No manure—size of plot, 1 square perch.
2. 20 tons Farmyard Manure—size of plot, 4 square perches.
3. 20 tons Liquid Manure—size of plot, 4 square perches.

XI.—*Liming Rotation Experiment.*

Size of each Plot. $\frac{1}{4}$ acre.

No. of Plots. At least four, and where possible, five.

Type of Lime. Either ground burnt lime, or ground limestone, according to local sources of supply. Ground limestone should, if possible, be used.

Dressing of Lime. Plot 1. Control.
,, 2. $\frac{1}{4}$ calculated " lime requirement."
,, 3. $\frac{1}{2}$,, ,, ,,
,, 4. Calculated ,, ,,
,, 5. $1\frac{1}{4}$,, ,, ,,

Time of application. The lime shall be applied to the grass immediately before ploughing for oats.

The crop yield on all the plots is to be recorded throughout a complete rotation.

Small samples of the grain and straw from all cereal crops on each of the plots will be required.

The artificial manures used during the rotation should, as far as possible, be superphosphate as the source of P_2O_5, sulphate of ammonia as the source of nitrogen and muriate of potash as the source of potash. The quantities applied should be sufficient to prevent nitrogen, phosphates and potash becoming limiting factors.

The plots should be carefully marked with permanent pegs at time of application of lime.

Season 1924. Root Crop. Same crop and variety on all plots. Produce to be weighed.

XII.—*Experiment with Phosphatic Manures on Potatoes* (One year test).

Size of each Plot. 1/20 acre, provided that there are at least four drills in each plot.

Number of Plots. 3.

Plot 1. No phosphate.
$1\frac{1}{2}$ cwt. Sulphate of Ammonia.
$1\frac{1}{2}$ cwt. Muriate of Potash.

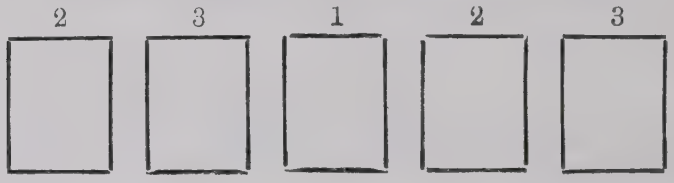
Plot 2. 6 cwt. 35% Superphosphate.
$1\frac{1}{2}$ cwt. Sulphate of Ammonia.
$1\frac{1}{2}$ cwt. Muriate of Potash.

Plot 3. Gafsa Phosphate (Equivalent to 6 cwt. 35% Superphosphate).
$1\frac{1}{2}$ cwt. Sulphate of Ammonia.
$1\frac{1}{2}$ cwt. Muriate of Potash.

No farmyard manure may be applied. Plots are to be in duplicate. The control plot (No. 1) may be 1/20 or 1/40 of an acre, and need not be duplicated.

Note:—In the duplication of plots, the duplicate of any one plot should not be laid down immediately alongside the original but in another part of the field. The produce of both original and duplicate plots is to be weighed and the returns from each given separately. The object of such duplication is to try to eliminate experimental error due to possible differences in the soil of the plots.

The following is a suggested lay-out of the experiments :—



XIII.—*Experiment to compare various phosphatic fertilisers on Potato Crop.*

Number of Plots. 6.

Size of each Plot. 1/20th acre plots to be duplicated.

Plot 1. 12 tons farmyard manure.
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

Plot 2. 12 tons farmyard manure.
4 cwt. superphosphate (35%).
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

Plot 3. 12 tons farmyard manure.
Gafsa phosphate (equivalent to 4 cwt. super phosphate (35%)).
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

Plot 4. 12 tons farmyard manure.
Nauru phosphate equivalent to 4 cwt. super phosphate (35%).
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

Plot 5. 12 tons farmyard manure.
High grade basic slag equivalent to 4 cwt superphosphate (35%).
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

Plot 6. 12 tons farmyard manure.
Peerless basic phosphate equivalent to 4 cwt. superphosphate.
1 cwt. sulphate of ammonia.
1 cwt. muriate of potash.

XIV.—*Turnip Crop—Experiment with phosphatic Manures.*

Size of each Plot. 1/20th statute acre, provided there are at least four drills in each plot, except plot 1, which may be 1/40th of an acre and this plot need not be duplicated.

Plots are to be duplicated as prescribed in the case of the experiments with Phosphatic Manures on Potatoes (No. XII.).

No farmyard manure is to be applied.

The following kinds and quantities of manures are to be used per statute acre :—

Plot 1. No Phosphate.
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

Plot 2. 6 cwt. Superphosphate.
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

Plot 3. Gafsa Phosphate (equivalent to 6 cwt. Superphosphate (35%)).
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

Plot 4. Basic Bessemer Slag (equivalent to 6 cwt. Superphosphate (35%)).
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

Plot 5. Nauru Phosphate (equivalent to 6 cwt. Superphosphate (35%)).
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

Plot 6. Peerless Basic Phosphate (equivalent to 6 cwt. Superphosphate (35%)).
1½ cwt. Sulphate of Ammonia.
1½ cwt. Muriate of Potash.

XV.—*Turnip Crop. Experiment with Mineral Phosphates.*

(Fineness of grinding.)

Plots to be duplicated.

Size of each plot—one-twentieth or one-tenth of a statute acre. Not less than four drills may be included, and the two outside drills should be excluded when taking results.

The following kinds and quantities of manures should be applied per statute acre :—

Plot 1. 1½ cwt. Sulphate of Ammonia.
4½ cwt. Kainit.
6 cwt. Superphosphate (35%).

Plot 2. 1½ cwt. Sulphate of Ammonia.
4½ cwt. Kainit.
West Indies Mineral Phosphate (Fineness 100 sieve) equivalent to 6 cwt. Superphosphate (35%).

Plot 3. 1½ cwt. Sulphate of Ammonia.
4½ cwt. Kainit.
West Indies Mineral Phosphate (Fineness 160 sieve) equivalent to 6 cwt. Superphosphate (35%).

Plot 4. 1½ cwt. Sulphate of Ammonia.
4½ cwt. Kainit.
West Indies Mineral Phosphate (Fineness 180 sieve) equivalent to 6 cwt. Superphosphate (35%).

Plot 5. 1½ cwt. Sulphate of Ammonia.
4½ cwt. Kainit.
No phosphate.

No farmyard manure may be applied.

XVI.—*Manuring of Hay for Seed.*

Size of Plots—Not less than $\frac{1}{8}$th statute acre.

The yield of threshed hay and seed to be determined. Samples of seed to be submitted as required by the Ministry. Crops of hay under experiment to be either pure Perennial or pure Italian.

The following kinds and quantities of manure to be applied per statute acre :—

Plot 1. 3 cwt. Superphosphate (35%).

Plot 2. 1 cwt. Sulphate of Ammonia.

Plot 3. 3 cwt. Superphosphate (35%).
1 cwt. Sulphate of Ammonia.

Plot 4. 3 cwt. Superphosphate (35%).
¾ cwt. Sulphate of Potash.

Plot 5. 3 cwt. Superphosphate.
1 cwt. Sulphate of Ammonia.
¾ cwt. Sulphate of Potash.

Plot 6. No manure.

Special Series of Experiments with Phosphatic and Nitrogenous Manures.

1. Rotation Experiment with Phosphatic Manures commenced in 1922 with Turnip Crop.

Size of each plot—not less than one-tenth or more than a quarter of a statute acre.

The 1924 crop of hay is to be weighed.

2. Hay Crop, 1923. (Rotation experiment with Phosphatic Manures). (Manures applied in 1922).

Size of each plot is ¼ of a statute acre.

The hay crop is to be weighed, if possible, in 1924. Valuable information would be obtained if the succeeding lea oat crop could also be weighed.

3. Potato Crop, Experiment with Nitrogenous Manures.

Size of each plot—one-twentieth or one-tenth of a statute acre. Not less than four drills may be included, and the two outside drills should be excluded when taking results.

The following kinds and quantities of manures should be applied per statute acre :—

No. of Plot.

1. No Nitrogen.
   6 cwt. Superphosphate (35%).
   1½ cwt. Muriate of Potash.
2. 1½ cwt. Sulphate of Ammonia.
   6 cwt. Superphosphate (35%).
   1½ cwt. Muriate of Potash.
3. Chloride of Ammonia (equivalent to 1½ cwt. Sulphate of Ammonia).
   6 cwt. Superphosphate (35%).
   1½ cwt. Muriate of Potash.
4. Chloride of Ammonia (equivalent to 1½ cwt. Sulphate of Ammonia).
   6 cwt. Superphosphate (35%).
   1½ cwt. Muriate of Potash.
5. 1½ cwt. Sulphate of Ammonia.
   6 cwt. Superphosphate (35%).
   1½ cwt. Muriate of Potash.

1 cwt. Nitrate of Soda. To be applied at time of first moulding of crop to Plots 4 and 5.

No farmyard manure may be applied.

FLAX :—SCHEME OF VARIETY TRIALS, DEMONSTRATIONS, &c., 1924.

1. *Ministry's Variety Trials at Coleraine.*

The following varieties to be tested :—

Danish Pure Line No. 21 ex Denmark.
Danish Pure Line No. 40 ,, ,,
" J.W.S."
Livonian 2.
Danish Pure Line No. 21 ex Strabane.
Danish Pure Line No. 40 ,, ,,
Dutch (blue flowering).
Dutch (white flowering).
Pernau Crown.
Riga or Saginaw (U.S.A.).

Size of each plot—1-10 Statute Acre.

The following kinds and quantities of manures to be applied per Statute Acre :—

1½ cwt. Muriate of Potash.
½ ,, Sulphate of Ammonia.

2. *Demonstration Plots.*

With a view to demonstrating the comparative merits of different kinds of flax seed and the use of manures as an application to the flax crop, demonstration plots as indicated below are to be carried out by each Flax Instructor in his County.

No. of Plots.	*Varieties to be tested.*	*Manurial Treatment.*
4	Dutch or Pernau or Riga.	
	Dutch.	Unmanured.
	Riga.	1½ cwt. Muriate of Potash.
	Pernau.	½ ,, Sulphate of Ammonia per Statute Acre.
	"J.W.S."	
	Danish Pure Line No. 21.	

The plots should be laid down in fields along public roads so that farmers passing may have an opportunity of seeing the plots.

3. *Propagation Plots.*

The propagation of new and promising varieties of flax to be carried out at the North-West Agricultural School.

The following varieties are to be under propagation on plots varying from 1 rood to 3 roods in extent :—

Department's Pure Line No. 6.
Hunter's Hybrid 2 x 6.
Danish Pure Line No. 21.

SCHEME OF POTATO EXPERIMENTS, 1924, TO BE CARRIED OUT BY THE MINISTRY.

1. *Variety Tests.*

The main object of the experiment is to determine which of the immune varieties are best suited to replace the standard non-immunes which are now generally grown in Northern Ireland.

The total number of the varieties to be tested is 66, of which 40 are immunes.

2. *Tests of Different methods of cutting seed.*

In these tests whole seed of 3 standards of size are to be compared with cut seed treated in four different ways.

3. *Change of Seed Tests.*

In these tests stocks of seed of 25 varieties of potatoes which have been grown at Dundonald in previous years are to be tested

at Stormont against stocks of corresponding varieties to be obtained from various parts of Northern Ireland and Scotland.

A corresponding test also to be carried out at the North-West Agricultural School.

4. *Effect of Planting Seed at Different Distances Apart.*

Three different plots are to be planted as follows :—

Plot 1. Seed 10 ins. apart.
,, 2. ,, 15 ins. apart.
,, 3. ,, 20 ins. apart.

5. *Selection of Seed.*

At Strabane tests are to be carried out with seed selected from high yielding plants as compared with seed taken from bulk. A considerable number of varieties of potatoes will be compared in these tests.

SCHEME OF TESTING FOR IMMUNITY.

1. Official tests of new varieties to be carried out in conjunction with Ministry of Agriculture and Fisheries and Board of Agriculture for Scotland.

2. Tests to determine the identity of different varieties of potatoes grown in Northern Ireland under various names.

3. Unofficial tests to assist potato raisers in ascertaining whether new varieties at an early stage in their propagation are immune.

TESTS OF IMMUNE VARIETIES IN SCHEDULED DISTRICTS.

Eleven of the leading immune varieties are to be tested on farms at six centres in different parts of the Scheduled Area.

Circular No. 151.

MEMORANDUM.

Specification of Packing Cases for Poultry Approved by the Ministry.

(1) The following one dozen chicken case is specially recommended. It should be made with one compartment to hold one layer of chickens with two rows of six birds packed lengthwise.

Internal dimensions : 27 ins. long, $16\frac{1}{2}$ ins. broad, $4\frac{7}{8}$ ins deep.
Ends : 2 pieces, $16\frac{1}{2}$ ins. x $4\frac{7}{8}$ ins. x $\frac{3}{4}$ in.
Sides : 2 pieces, $28\frac{1}{2}$ ins. x $4\frac{7}{8}$ ins. x $\frac{3}{8}$ in.
Top and Bottom : 6 pieces, $28\frac{1}{2}$ ins. x $5\frac{7}{8}$ ins. x $\frac{3}{8}$ in.

(2) These two specifications are recommended for boxes to contain one dozen chickens of slightly smaller size than those for which box No. 1 is suitable.

(a) Internal dimensions : 25 ins. long, $15\frac{1}{2}$ ins. broad, $4\frac{1}{2}$ ins deep.
Ends : 2 pieces, $15\frac{1}{2}$ ins. x $4\frac{1}{2}$ ins. x $\frac{3}{4}$ in.
Sides : 2 pieces, $26\frac{1}{4}$ ins. x $4\frac{1}{2}$ ins. x $\frac{3}{8}$ in.
Top and Bottom : 2 pieces, $26\frac{1}{4}$ ins. x $16\frac{1}{4}$ ins. x $\frac{3}{8}$ in.

(b) Internal dimensions, 26 ins long, $16\frac{1}{4}$ ins. broad, $4\frac{3}{4}$ ins. deep.
Ends : 2 pieces, $16\frac{1}{4}$ ins x $4\frac{3}{4}$ ins x $\frac{3}{4}$ in.
Sides : 2 pieces, $27\frac{1}{4}$ ins. x $4\frac{3}{4}$ ins x $\frac{3}{8}$ in.
Top and Bottom : 2 pieces, $27\frac{1}{4}$ ins. x 17 ins x $\frac{3}{8}$ in.

The Ministry has reason to believe that the adoption of these cases for use instead of larger sized cases, has enabled shippers to dispose of their birds at higher prices.

(3) A case to hold two dozen to three dozen chickens.

Description :—To be made in one compartment to hold one layer of chickens with five rows of birds packed stern uppermost. The number in each row would be dependent on the size of the birds.

Internal dimensions : 29 ins. long, 21 ins broad, 7 ins. deep.
Ends : 2 pieces, 21 ins. x 7 ins. x $\frac{1}{2}$ in.
Sides : 4 pieces, 30 ins. x 3 ins. x $\frac{3}{8}$ in.
Top and bottom : 8 pieces, 30 ins. x 4 ins. x $\frac{3}{8}$ in.
Battens (for top) : 3 pieces, $21\frac{3}{4}$ ins. x 2 ins. x $\frac{5}{8}$ in.
Battens (for bottom) : 3 pieces, $21\frac{3}{4}$ ins. x 2 ins. x $\frac{1}{2}$ in.
Uprights to have 2 side battens $8\frac{1}{2}$ ins. x 2 ins. x $\frac{1}{2}$ in.
Corner angle posts, 4 posts, 7 ins. x 2 ins. x 2 ins.
Weight of chickens 90—100 lbs. nett.

(4) A case suitable for 12 ducks of an average weight of 5 lbs. To be made in one compartment to hold one layer of ducks with two rows of six birds packed lengthwise.

Internal dimensions : 34 ins. long, $21\frac{1}{4}$ ins. broad, $3\frac{1}{2}$ ins deep.
Ends : 2 pieces, $21\frac{1}{4}$ ins. x $3\frac{1}{2}$ ins. x $\frac{3}{4}$ in.
Sides : 2 pieces, $35\frac{1}{2}$ ins. x $3\frac{1}{2}$ ins. x $\frac{3}{8}$ in.
Top and bottom : 8 pieces, $35\frac{1}{2}$ ins. x $5\frac{1}{2}$ ins. x $\frac{3}{8}$ in.

(5) A crate of the following dimensions is recommended for the packing of turkeys.

Internal dimensions : $40\frac{1}{2}$ ins. long, 27 ins. broad, 12 ins. deep.
Ends : 4 pieces, 27 ins. x $5\frac{1}{2}$ ins. x $\frac{3}{4}$ in.
Sides : 4 pieces, 42 ins. x $5\frac{1}{2}$ ins. x $\frac{7}{16}$ in.
Top and bottom : 8 pieces, 42 ins. x 6 ins. x $\frac{7}{16}$ in.
6 battens (top and bottom) : $27\frac{7}{8}$ ins. x 3 ins. x $\frac{3}{4}$ in.
Uprights (sides) : 2 pieces, 14 ins. x 3 ins. x $\frac{1}{2}$ in.
Corner angle posts : 4 posts, 12 ins. x 2 ins. x 2 ins.

The crate specified above will accommodate :—

10—20 cocks, according to size,
or 20—30 hens ,, ,, ,,
or 25 geese.

Geese should be packed in two layers in this crate.

The different kinds of poultry should be graded according to size and quality, and only one size or quality packed in any one case. If this is done they :—

(a) are less liable to damage in transit ;
(b) present a better appearance and
(c) command a higher price.

December, 1923.

To each Poultry Shipper in Northern Ireland.

Circular No. 148.

MEMORANDUM.

The Preparation and Packing of Poultry for Cross-Channel Markets.

The Ministry feels it necessary to direct attention to the pressing need for an immediate improvement in the methods of marketing at present adopted by poultry exporters in Northern Ireland. Having regard to the competition with poultry properly prepared and more attractively packed which has to be encountered from other suppliers, it should be manifest that, if the maximum volume of trade is to be secured and the reputation of the poultry industry in Northern Ireland to be enhanced, it is essential that poultry shippers should give the closest attention to the important details connected with up-to-date marketing.

The Ministry is desirous that a standard sufficiently high, both in the preparation of the birds and in the methods of packing should be aimed at, so that the poultry may be marketed to the best advantage in Cross-Channel markets. The points set forth below are of particular importance, and by paying strict attention thereto exporters will be in a position to command higher prices in British Markets.

1. Birds should be well fasted before killing.
2. Birds should be killed by dislocation only.
3. Birds should be plucked immediately after killing.

Chickens should be clean plucked to within a few inches of the head, and should be well stubbed, care being taken that the skin is not injured. Well plucked and stubbed chickens fetch from 1d.—2d. per lb. more than those that are indifferently plucked and stubbed.

Ducks, geese and turkeys should be treated similarly, except that in the case of ducks and geese the small feathers should be left on the outer joints of the wings, but all quill feathers should be removed. In the case of turkeys the feathers should be left on the hips as well as on the outer joints of the wings to protect the more tender skin of these birds during transit.

Coarse canvas aprons should not be worn by pluckers, as the canvas destroys the skin on the birds during the process of plucking.

4. In order to obviate the risk of objectionable odours being present in consignments of poultry on arrival it is important that the feet of all varieties of poultry should be thoroughly cleaned and dried before the birds are placed in the packing cases. The feet of plucked ducks and geese should be folded back so as to lie flat against the back.

5. After being plucked, chickens, ducks and geese should, while still warm, be placed in a single layer on shaping boards in a cold room; if possible the room should have a current of air passing through it and any openings in the room, such as windows or half-doors should be covered with muslin to prevent dirt and dust reaching the birds.

The birds should be placed on the benches breast downwards, and with heads hanging so that the blood may collect in the space at the head caused by the dislocation of the bones of the neck. The birds should not be removed from the shaping boards until they are quite cold.

Turkeys should be hung by the legs immediately after plucking, a separate hook being provided for each bird.

6. Packing should not begin until the fowl are quite cold. If birds are packed while there is still any body heat present the flesh will be green-coloured on arrival. Such birds are unsaleable, and are liable to be seized by the Sanitary Officer.

7. Diseased birds should never under any consideration be included in a consignment.

8. The different kinds of poultry should be graded according to size and quality, and only one size or quality packed in any one case. If this is done they

(a) are less liable to damage in transit;

(b) present a better appearance and

(c) command a higher price.

9. Fowl should always be packed in suitable non-returnable cases. Very large cases are not desirable owing to the fact that the birds in the centre are liable to become unfit for food as a result of heating. Clean, well-finished cases present an attractive appearance and help the sale of the commodity they contain.

The " one-dozen " chicken case is specially recommended. This should be made with one compartment to hold one layer of chickens with two rows of six birds packed lengthwise.

Internal dimensions : 27 ins. long, 16½ ins. broad, 4⅞ ins. deep.
Ends : 2 pieces, 16½ ins. x 4⅞ ins. x ¾ in.
Sides : 2 pieces, 28½ ins. x 4⅞ ins. x ⅜ in.
Top and bottom : 6 pieces, 28½ ins. x 5⅞ ins. x ⅜ in.

The Ministry has reason to believe that the adoption of this case for use instead of the larger sized cases has enabled shippers to dispose of their birds at higher prices.

The dimensions of other approved cases, including those recommended for ducks, geese and turkeys, can be had on application to the Ministry.

The material used for packing should invariably be clean wheat straw for the tops and bottoms of the cases, with parchment paper below and above each layer of birds; in the case of turkeys each bird should be wrapped separately in parchment paper. Damp or dusty straw, newspapers or brown paper of any kind should not on any account be used for packing purposes, as they are highly objectionable and detract from the value of the birds when the cases are opened for sale. A firm, well-packed case travels best.

10. Each case should be branded on both ends to show—

(a) the number of birds it contains;

(b) the grade, and

(c) the sex, in the case of turkeys only.

11. Particulars of consignments should be given on a card which should be placed on the top of the birds in each case, or such particulars may be written on the backs of the address labels attached to each case. It is always advisable to forward consignments of poultry by passenger train during mild weather. Consignments should be advised by telegram confirmed later by letter.

In view of the fact that keen competition is likely to prevail in the British markets during the coming Christmas season, the Ministry strongly urges all poultry shippers in Northern Ireland to give particular attention to the foregoing recommendations.

It should be borne in mind that birds sent for sale on a commission basis (the usual method) are sold on their merits in competition with supplies from Scotland, Norfolk, the South of England and Foreign countries, many of the consignments from these sources being of outstanding quality.

12. The Ministry would impress most strongly on all shippers the necessity for obtaining through the usual trade channels of information satisfactory assurances as to the commercial and financial standing of the buyers and salesmen to whom they propose to send consignments.

November, 1923.

To each Poultry Shipper in Northern Ireland.

Marking of Butter Packages

MEMORANDUM.

Conditions governing the award, etc., of the stamp to be supplied by the Ministry for use in marking butter boxes :—

(1) *Award of the Ministry's stamp.*

To qualify for the award of the stamp a Creamery must have obtained at least "standard" marks in Surprise Butter Inspections six times in immediate succession.

(2) *Withdrawal of the Stamp.*

In the event of a Creamery failing to secure standard marks at any inspection the Ministry will, as soon as may be after the date of such inspection, require the Creamery to submit a special sample for the purpose of further examination, and if this special sample fails to secure standard marks the Ministry will require the Creamery to return the stamp forthwith.

Provided that, for the purposes of conditions 1 and 2 the Ministry may specially consider any case of failure on the part of the Creamery to obtain standard marks, where such failure was due to deficiencies in packing and finish, and where there was reason to believe that such deficiencies were being remedied forthwith.

(3) *Restoration of the stamp after withdrawal.*

A Creamery will not be regarded as qualifying for the restoration of the Ministry's stamp unless it shall have obtained at least standard marks in Surprise Butter Inspections three times in succession, provided that for the purposes of this condition arrangements may be made for the submission of two special samples for further inspection before the next succeeding Surprise Butter Inspection, and the awards gained at such further Inspections will be reckoned for all purposes as if they were awards gained at Surprise Butter Inspections.

(4)

The stamp will not be issued to any Creamery unless the undertaking, of which a copy is attached hereto, has been entered into by the Secretary on behalf of the Committee of Management of the Creamery.

(5) *General.*

In any case where a Creamery fails to fulfil the terms of the undertaking in regard to the submission of samples to Surprise Butter Inspections, the Ministry will not withdraw the stamp until the Creamery has had an opportunity of submitting an explanation as to its failure to carry out its liability in this respect. Should the explanation appear to the Ministry to be satisfactory, the Ministry may, as an exceptional measure, make

arrangements for the taking of a special sample from the Creamery, and such sample shall for all purposes be regarded as a sample submitted to a Surprise Butter Inspection.

MEMORANDUM of Undertaking entered into this ..... day of

..... 1924, by the .....
Creamery regarding the use of the stamp provided by the Ministry of Agriculture, Northern Ireland, for the purpose of marking butter boxes.

In consideration of being provided by the Ministry of Agriculture, Northern Ireland, with a rubber stamp, of which an impression is affixed over leaf, for the purpose of marking butter

boxes, I, ... on behalf

of the Committee of Management of the .....
Creamery, hereby undertake

(1) To use the rubber stamp for marking those boxes only which contain butter produced at the said Creamery.

(2) To submit one sample of the butter, in connection with which it is proposed the stamp should be used, to each Surprise Butter Inspection conducted by the Ministry.

In the event of any sample of butter sent by the said Creamery to any Surprise Butter Inspection conducted by the Ministry falling below the " standard " mark in quality;

or of the said Creamery ceasing to participate in such inspections;

or of any sample of butter despatched from the said Creamery proving, on analysis, to contain more than 16% of moisture;

or of the Ministry being satisfied that the stamp has been used in any other manner which is to the prejudice of the general interests of the trade in Northern Ireland Creamery Butter,

I hereby declare that, on demand by the Ministry, I will return the said stamp to the Ministry, and not make use of any similar device.

Signature .....

Witness .....

Official Number Stamp used by Creameries participating in the Ministry's Surprise Butter Inspections.

Special Stamp awarded by the Ministry to Creameries consistently producing butter of at least " Standard " quality.

9th October, 1923.

Agricultural Schemes, 1924.

Sir,

I have to acquaint you that the several Agricultural Schemes have been revised, and the following are the chief changes which have been made in the existing schemes :—

Cattle Breeding Scheme. Omission of final sentence in Clause 11 (3), viz., " Such permission, however, can be granted only in the case of three-year old or older bulls."

Swine Breeding Scheme. No change.

Subsidies to Agricultural and Industrial Societies, etc. No change.

Prizes for Cottages and Small Farms. No change.

Instruction in Agriculture. No change apart from slight recasting of the wording in several clauses.

Winter Agricultural Classes. Clause 3 (1). Centres for classes to be selected not later than 1st July and no centre to be chosen for the third consecutive year.

Clause 4 (4). Maximum number of students to be admitted increased from twenty-four to *thirty*. Minimum number of students to warrant a proposed class being held reduced from twelve to *ten*.

Clause 4 (5). No applicant to be permitted to join a class after the lapse of *three* weeks from the date of the first meeting.

Clause 5. A class to be discontinued if the attendance falls below *six* on *four* consecutive occasions.

Clause 9. Addition of the following paragraph :—" Satisfy himself that suitable and adequate equipment is at each centre on the opening day of the class."

Instruction in Poultry-keeping. No material change.

Poultry Stations. No change.

Scheme of Instruction in Butter-making and Home Cheese-making. No material change.

Scheme of Instruction in Horticulture and the Management of Bees. No material change.

Horse Breeding Scheme. The changes in this Scheme were communicated to the Committee in the Ministry's letter of the 29th August last.

I have to add that supplies of the new schemes have already been forwarded to you, and additional copies may be obtained on application to these offices.

I am, Sir,

Your obedient Servant,

(Signed) J. V. COYLE.

To the Secretary of each County Committee of Agriculture.

Egg-Laying Tests (Ducks), 1924-25.

RULES.

1. The Ministry proposes to hold at Stormont, Strandtown, Belfast, the second of a series of Egg-laying Tests for Ducks.

2. The Test will extend over a period of 48 weeks, commencing on 15th October, 1924, and ending on 15th September, 1925.

3. Records will be kept and published of the number and value of all eggs of not less than 2 oz. in weight laid by each pen.

4. The names and addresses of all competitors will be published monthly, together with records of the number of eggs laid by their birds.

5. A pen will consist of five ducks of one breed and one variety of the breed hatched during the year 1924. All pure breeds are eligible for the Test, provided they are the property of, and bred from stock the property of, a resident in Northern Ireland.

6. Not more than 12 pens will be accepted.

7. If entries are received in excess of the accommodation provided a selection will be made, and preference may be given to entries from breeders who have trapnested their ducks but only one entry will be accepted from each selected entrant.

8. All eggs laid will be sold, and the amount realised applied towards defraying the expenses of the Test.

9. In the event of the death of a bird through accident or otherwise, no replacement will be allowed, but the number and value of the eggs laid by such bird will be credited to the pen.

10. The entry fee in respect of each pen shall be £1, to be paid at the time of entry. This sum will cover return carriage on birds at the close of the Test.

11. The entry fee will be refunded to owners who are unsuccessful in having their birds accepted, but it will not be refunded to owners who fail to send pens which have been accepted.

12. Entries, to be made on forms supplied by the Ministry of Agriculture, will close on the 1st September, 1924. As soon after that date as possible rings will be sent to competitors whose birds have been accepted.

13. Birds sent by rail must arrive, carriage paid, at Belfast Stations not before Wednesday, 1st October, or after Thursday, 2nd October, 1924.

If owners so desire, the ducks may be sent direct to Stormont by motor or other conveyance.

14. On arrival at the place of Test the birds will be carefully examined, and any pens judged to be immature, or in any way unsuitable, will be returned.

15. While every care will be taken, the Ministry will not be responsible for loss or injury to birds in any way in connection with the Test.

16. Prizes will be awarded on the basis of market value of eggs laid, the pens producing eggs of highest market value to receive the awards.

17. No egg weighing less than 2 oz. will be credited to any duck.

18. Provided there are not less than 10 entries, the following prizes will be awarded :—

First Prize, £10.
Second ,, £6.
Third ,, £4.

19. A silver medal will be awarded in respect of the individual duck laying eggs of the highest market value during the Test (subject to Rule 17).

20. A first class certificate will be awarded in respect of every pen of ducks laying not less than 1,000 eggs during the Test (subject to Rule 17).

A second class certificate will be awarded in respect of every pen laying less than 1,000 but not less than 800 eggs during the Test (subject to Rule 17).

21. A special certificate of merit will be awarded in respect of every duck laying not less than 220 eggs during the period of the Test (subject to Rule 17).

22. Competitors and visitors will be allowed to visit the Test on Wednesdays and Saturdays from 2 p.m. to 4 p.m. and at other times by appointment with the Manager of the Laying Test, Stormont, Strandtown, Belfast.

23. Entry Forms and all other information can be had on application to the Ministry of Agriculture, Northern Ireland, Wellington Place, Belfast, whose decision in all matters relating to the Test and these Rules shall be final.

NOTE:—Postage on letters addressed to the Manager of the Laying Test at Stormont, Strandtown, Belfast, must be prepaid.

April, 1924.

Egg-Laying Tests (Pullets) 1924-25.

RULES.

1. The Ministry proposes to hold at Stormont, Strandtown, Belfast, the third of a series of Egg-Laying Tests for Pullets.

2. The Test will extend over a period of 48 weeks, commencing on 15th October, 1924, and ending on 15th September, 1925.

3. Records will be kept and published of the number, grade and value of all eggs of not less than 1½ oz. in weight laid by each pullet, and of the total number, weight and value of such eggs produced by each pen.

4. The names and addresses of all competitors will be published monthly, together with records of the number of eggs laid by their birds.

5. A pen will consist of six pullets hatched during the year 1924, and the birds shall be of one breed and one variety of the breed. All pure breeds are eligible for the Test, provided they are the property of, and bred from stock the property of, a resident in Northern Ireland.

6. Not less than 72 pens will be provided.

7. Breeds will be divided into Sections as follows :—

Section	1.	White Wyandottes	22 pens.
,,	2.	White Leghorns	20 ,,
,,	3.	Non-sitting breeds, other than White Leghorns	10 ,,
,,	4.	Sitting breeds, other than White Wyandottes	10 ,,
,,	5.	Station-holders' Section (any approved breed)	10 ,,

If the number of entries in any Section is less than the number of pens provided for that Section, the number of pens in one or more of the other Sections may be correspondingly increased (subject to Rule 8).

8. A Breeder may make more than one entry, but not in one Section. If the entries received exceed the number of pens provided, the choice of pens will be made so as to have as many breeders represented as is possible (subject to Rule 7). Subject to this condition the final selection of the entries for any Section will be made by ballot. If balloting is adopted the owners of pens balloted out will, according to the order of ballot, be given the option of filling any vacancy in the Section caused by the enforcement of Rule 16.

9. A separate house and run will be provided for each pen of pullets and trap nests in the proportion of one for every two birds.

10. All eggs laid will be sold, and the amount realised applied towards defraying the expenses of the Test.

11. In the event of the death of a bird through accident or illness no replacement will be allowed, but the number and value of the eggs laid by such bird will be credited to the pen.

12. The entry fee in respect of each pen will be £1, to be paid at the time of entry. This sum will cover return carriage on birds at the close of the Test.

13. The entry fee will be refunded to owners who are unsuccessful in having their birds accepted or whose birds are returned for any reason before the expiration of the Test, provided in the latter case, that the birds have not qualified for the award of a prize or certificate. Entry fees will not be refunded to owners who fail to send pens which have been accepted.

14. Entries, to be made on forms supplied by the Ministry of Agriculture, will close on the 12th August, 1924. As soon after that date as possible rings will be sent to competitors whose birds have been accepted.

15. Birds sent by rail must arrive, carriage paid, at Belfast Stations not before Tuesday, 7th October, or after Wednesday, 8th October, 1924.

If owners so desire, the pullets may be sent direct to Stormont by motor or other conveyance.

16. On arrival at the place of test, the birds will be carefully examined, and any pens judged to be in any way unsuitable will be returned. If at any time a bird develops a disease which, in the opinion of the Ministry, would be likely to endanger the health of the birds in the other pens, the pen containing the affected bird will be returned to the owner.

THIS RULE WILL BE STRICTLY ENFORCED.

17. While every care will be taken the Ministry will not be responsible for loss or injury to birds in any way in connection with the Test.

18. Prizes will be awarded on the basis of market value of eggs laid, the pens producing eggs of highest market value to receive the awards; *but no pen, the eggs of which fail to average 24 oz. per dozen during the period of the Test, shall be eligible for a prize or other award.*

19. No individual bird producing more than 50 second grade eggs shall be eligible for a special medal or certificate.

20. For the purposes of this Test during the first 28 days of the Test a first grade egg shall weigh not less than $1\frac{7}{8}$ oz., during the second 28 days not less than 1 15/16 oz., and during the remainder of the Test not less than 2 oz. The minimum weight for a second grade egg at every stage of the Test shall be $\frac{1}{4}$ oz. less than the minimum then in force for a first grade egg. Any eggs below second grade will be included separately in the published records of the Test, but will not be counted as of any value in making the awards.

21. The following prizes will be awarded in each of the Sections 1 and 2 provided there are not less than 20 entries accepted for the Section :—

First Prize, £10.
Second ,, £6.
Third ,, £5.
Fourth ,, £4.
Fifth ,, £3.

Three prizes, as follows, will be awarded in each of the Sections 3, 4 and 5, provided there are not less than 10 entries in the Section :—

First Prize, £10.
Second ,, £6.
Third ,, £3.

If there are less than 10 but not less than 6 entries in the Section, two prizes, as follows, will be awarded :—

First Prize, £10.
Second ,, £6.

No prize will be awarded in respect of any pen producing less than 960 eggs during the period of the Test.

22. A special prize of a silver cup will be awarded in respect of the pen laying eggs of highest market value during the Test (subject to Rule 18).

23. A silver medal will be awarded in respect of the individual pullet laying eggs of highest market value during the Test (subject to Rule 19).

24. A bronze medal will be awarded in respect of the individual pullet laying eggs of the highest market value in each Section during the Test (subject to Rule 19).

25. A special prize of £2—to be known as the Winter Egg Prize—will be awarded in respect of the pen laying eggs of highest market value from October 15th, 1924, to January 31st, 1925 (subject to Rule 18).

26. A first class certificate will be awarded in respect of every pen of pullets laying not less than 1,200 eggs during the Test (subject to Rule 18).

A second class certificate will be awarded in respect of every pen laying less than 1,200 but not less than 960 eggs during the Test (subject to Rule 18).

27 A special certificate of merit will be awarded in respect of every pullet laying not less than 220 eggs during the period of the Test (subject to Rule 19).

28. Competitors and visitors will be allowed to visit the Test on Wednesdays and Saturdays from 2 p.m. to 4 p.m., and at other times by appointment with the Manager of the Laying Test, Stormont, Strandtown, Belfast.

29. Entry forms and all other information can be had on application to the Ministry of Agriculture, Northern Ireland, Wellington Place, Belfast, whose decision in all matters relating to the Test and these Rules shall be final.

Note :—Postage on letters addressed to the Manager of the Laying Test at Stormont, Strandtown, Belfast, must be prepaid.

A silver rose-bowl, known as the "John Waters Perpetual Memorial Challenge Trophy," is offered for competition by the Irish Fanciers' Association, in connection with the Ministry's Egg-laying Tests. The trophy is confined to members of the Irish Fanciers' Association competing in the Ministry's Tests, and the decision regarding the award rests with the Association.

April, 1924.

Egg-Laying Test (Ducks), 1923-24.

16th October, 1923, to 15th September, 1924 (48 weeks).

10 Pens of 5 Ducks Each Competing.

The first prize has been won by Mrs. Marshall's pen of White Runners, which beat Mrs. Bell's Khaki Campbells by a very narrow margin. The average yield for the flock of 50 ducks entered was 168.5 eggs, as against 181.6 for the pullets.

The best duck, a fawn and white Runner, entered by Mrs. Chichester (née Miss H. G. Young), laid 284 eggs in 48 weeks. This duck is now the property of Colonel Hart. The bird's dam laid 275 eggs in her first year.

Four ducks died, or 8% of the total flock.

The following table gives the number and value of eggs laid by each pen up to and including 15th September, 1924.

Order of Merit	No. of Pen	Name and Address of Owner.	No. of eggs laid 16th Oct. 15th Sept	Value of eggs laid.	Breeds.
1	6	Mrs Marshall, Keadybeg, Whitecross	1092	10 15 6½	White Runner
2	1	Mrs. Bell, Ballyward, Banbridge	1067	10 14 11	Khaki Campbell
3	7	Mrs. Stewart, Knock Road, Belfast	1037	10 5 5¾	do.
*4	10	Mrs. Chichester, (neé Miss H. G Young), Ballymena	1014	9 11 1¾	Fawn & White Runner
5	8	Villa Colony Poultry Farm, Purdysburn, Belfast	828	7 16 11	White Runner
6	2	Mr. P. Cunningham, Strathroy, Omagh	830	6 13 6¼	Khaki Campbell
7	4	Mrs. Gray, Glenbrook, Finvoy, Ballymoney	735	6 12 8¼	Fawn & White Runner
8	9	Mrs. Workman, Carrowdore Castle, Donaghadee	693	5 19 10½	White Runner
9	5	Mrs. Jellie, Lisburn	600	4 12 9½	Coaley Fawn
10	3	The Lady Dunleath, Ballywalter Park, County Down	529	4 2 1½	White Runner

*Pen Sold to Colonel Hart, Kilderry, Londonderry.

Egg-Laying Test (Pullets), 1923-24.

16th October, 1923, to 15th September, 1924 (48 weeks).

The silver cup has been won by Miss R. B. M'Cormick's pen of White Wyandottes, with a total score of 1,408 eggs for the six pullets. This pen also wins the silver cup offered by the Scientific Poultry Breeders' Association for the best winter yield, in addition to the Winter Egg Prize offered by the Ministry. As in the case of last year's winner, Miss M'Cormick is an Egg Station-holder under the Ministry's Poultry Station Scheme.

The silver medal for the best pullet in the Test was secured by the White Wyandotte pullet No. 99 in Mrs Mitchel's pen No. 17. For the first time in the history of the Irish Tests two White Leghorn pullets proved formidable rivals for this prize. In view of the extreme severity of the winter and spring the laying of the pullets in the Leghorn section may be regarded as very satisfactory. The total eggs laid amounted to 22,732 for the 21 pens of 6 pullets, an average of 180.4 per bird. In one pen (Pen 30), although a pullet died on November 11th without having laid, the five remaining pullets put up a score of 1,058 eggs.

Five pens in the White Leghorn section qualified for 1st class certificates, and no pen was disqualified for having failed to reach the minimum weight of egg.

The average in the Wyandotte section falls considerably below that of 1922-23. Two pens in this section failed to reach the minimum weight of 24 oz. per dozen.

The best section in the Test is that confined to Station-holders (Section 5). In this section the egg average is 194 eggs per bird, and only one bird died in the total of eight pens.

The money prizes in this section go to Counties Down and Antrim; the best pullet in the section is to be found in Mrs. Stevenson's pen (County Armagh).

In the section for sitting breeds other than White Wyandottes (Section 4) the finish was so close that a week prior to the close of Test it was not possible to tell how the pens would be finally placed. Mrs. Irwin's Pen 58 (Rhode Island Reds) jumped from third to first place during the last period of the Test, and heads the list, with Miss Ewart's pen of the same breed a close second.

In the section for non-sitters other than White Leghorns (Section 3) Mr. Cowie's winning pen of Black Leghorns deserves special mention. The birds were as glossy and tight in feather on the last day of the Test as if they had just been sent in—no pen in the Test looked better at the close.

Mortality was 5.1 % of the whole flock as against 6.6 in 1922-23. The highest number of deaths occurred in the White Leghorn section.

A detailed report giving individual scores, values, broody periods, feeding costs and any other points of interest will be published as soon as possible.

The following table gives the number and value of eggs laid by each pen up to and including 15th September, 1924.

SECTION 1. WHITE WYANDOTTES (23 pens).

Order of Merit	No. of Pen	Name and Address of Owner.	No. of eggs laid 16th Oct. —15th Sept.	Value of Eggs £	s.	d.
1	14	Miss M'Cormick, Stewartstown	1408	13	9	7¾
2	3	Mrs. Benson, Cookstown	1293	11	19	11½
3	17	Mrs. Mitchel, Markethill	1185	11	18	2¾
4	15	Miss M'Donald, Comber	1230	11	15	3¼
5	22	Villa Colony Poultry Farm, Purdysburn, Belfast	1270	11	10	9¾
*	18	Miss Morrison, Tandragee	1278	11	9	0¾
6	1	Capt. C. Heron, Killyleagh	1268	11	7	9¼
*	7	Lt.-Com. Fforde, Lurgan	1250	11	3	1¼
7	8	Mr. R. J. G. Grainger, Craigavad	1165	10	19	7
8	20	Mrs. Osborne, Comber	1164	10	18	2¼
9	2	Viscountess Bangor, Downpatrick	1091	10	12	4¾
10	9	Mrs. Heron, Katesbridge	1147	10	11	6½
11	19	Mrs. Porter Porter, Lisbellaw	1191	10	8	10¼
12	10	Mr. A. E. Hurst, Dunmurry	1183	10	8	8½
13	4	Mr. F. G. Cardwell, Lower Castlereagh, Belfast	1111	10	5	10½
14	13	Mrs. L'Estrange, Killylea.	1077	10	4	9
15	70	Mr. James Heron, Killyleagh	1186	10	4	5½

Order of Merit	No. of Pen	Name and Address of Owner.	No of eggs laid 16th Oct. —15th Sept.	Value of Eggs £	s.	d.
16	11	Mr. A. Jackson, Islandmagee	1141	10	0	1½
17	16	Mr. J. M'Neill, Larne	1074	9	19	11¾
18	5	Mrs. Darley, Ballinamallard	1146	9	19	4½
19	23	Mr. H. L. Watson, Knock	1044	9	18	11¼
20	21	Mr. D. Freeland, Craigavad	1051	9	16	10½
21	12	Mrs. Johnston, Fivemiletown	757	7	2	9¼

*Failed to attain qualifying weight of egg.

SECTION 2. WHITE LEGHORNS (21 pens).

1	24	Mrs. Workman, Donaghadee.	1289	11	19	1¼
2	32	Mrs. Marshall, Whitecross	1172	11	6	5
3	31	Miss Marshall, Markethill	1144	11	6	3
4	27	Mr. T. Gibson, Cookstown	1267	11	1	7
5	41	Mr. N. Ormsby, Lisburn	1247	10	17	4¼
6	40	Miss Mulligan, Banbridge	1213	10	17	3
7	38	Mr. F. G. M'Murray, Lisburn	1243	10	13	6¾
8	44	Mr. H. L. Watson, Knock	1177	10	12	6¾
9	36	Mr. J. P. M'Murray, Lisburn	1197	10	11	7¾
10	37	Mrs. S. M'Murray, Newtownards	1165	10	11	4
11	43	Mrs. A. Stewart, Knock	1020	9	18	2½
12	25	The Lady Dunleath, Ballywalter	1024	9	8	3½
13	30	Mr. W. R. Hughes, Killylea	1058	9	6	9¾

Order of Merit	No. of Pen	Name and Address of Owner.	No. of eggs laid 16th Oct. —15th Sept.	Value of Eggs £ s. d.
14	34	Miss N. M'Auley, Antrim	1014	9 6 1¼
15	35	Mr. D. M'Intyre, Dungannon	1010	9 1 2¼
16	39	Mr. H. M'Ninch, Larne	998	8 19 1½
17	33	Mr. James M'Auley, Ballygrainey	945	8 16 11¼
18	28	Capt. C. Heron, Killyleagh	973	8 16 9½
19	29	Mr. James Heron, Killyleagh	971	8 10 2½
20	26	Lt.-Col. Traill, Bushmills	872	7 19 4¼
21	42	Miss Davidson, Moneymore	733	6 12 11¾

SECTION 3. NON-SITTERS OTHER THAN WHITE LEGHORNS (8 pens).

				£ s. d.	
1	45	Mr. James Cowie, Dunmurry	1223	10 17 3½	Black Leghorn
2	48	Mrs. Mayne, Newtownards	1081	9 10 6¼	do.
3	51	Miss Shields, Whitewell, Belfast	1075	9 6 6½	Andalusian
*4	52	Mrs. Chichester (née Miss H. G. Young) Ballymena	1019	8 15 0½	Brown Leghorn
5	47	Mr. A. E. J. Hurst, Dunmurry	890	7 19 2¾	Black Leghorn
6	49	Mr. J. G. M'Nabb, Lurgan	855	7 14 7	Ancona
7	46	Mr. D. Freeland, Craigavad	795	7 2 0	Black Leghorn
†	50	Mr. N. Ormsby, Lisburn	660	5 14 5½	Ancona

†Pen disqualified for weight.
*Pen sold to Miss Doak, Omagh.

SECTION 4. HEAVY BREEDS OTHER THAN WHITE WYANDOTTES (11 pens).

Order of Merit	No. of Pen.	Name and Address of Owner.	No. of eggs laid 16th Oct 15th Sep.	Value of Eggs.	Breed.
1	58	Mrs. Irwin, Tynan	1230	10 16 9½	Rhode Island Red
2	55	Miss N. Ewart, Portadown	1175	10 16 3¼	do.
3	56	Mr. D. Freeland, Craigavad	1051	10 13 5	do.
4	57	Miss Irwin, Tynan	1073	9 15 11½	Light Sussex
5	54	Mr. James Cowie, Dunmurry	1072	9 14 11¼	Rhode Island Red
6	61	Mrs. Scott, Castlereagh	1046	9 2 7	do.
7	63	Lt.-Col. Traill, Bushmills	970	9 1 11	Barnevelder
8	60	Mr. J. Porter, Ballygowan	896	7 14 0½	Light Sussex
9	59	Mr. F. G. M'Murray Lisburn	877	7 6 6½	Rhode Island Red
10	53	Mrs. Workman, Donaghadee	893	7 5 7	do.
11	62	Mrs. Stewart, Knock	731	6 5 11½	do.

SECTION 5. ANY APPROVED BREED (CONFINED TO HOLDERS OF EGG STATIONS) (8 pens).

1	68	Mrs Mayne, Newtownards	1229	12 3 2¼	White Wyandotte
2	66	Mrs. Gray, Finvoy, Ballymoney	1310	11 12 10½	do.
3	64	Mrs. Barnes, Greyabbey	1211	11 1 2½	do.
4	72	Mrs. Todd, Clogher, Lisburn	1168	10 12 0¾	do.
5	65	Mrs. Bell, Ballyward, Banbridge	1192	10 9 8¾	White Leghorn
6	69	Mrs. Stevenson, Benburb	1050	9 16 8¼	White Wyandotte
7	71	Mr. J. L. Taggart, Bushmills	1088	9 14 3¼	Rhode Island Red
8	67	Mrs. S. Jackson, Dungiven	1079	9 10 2¾	White Wyandotte

Horticultural Experiments, 1924.

1. *Apple Scab.*

Effect of various spraying mixtures. The official experiment adopted for 1923 is to be continued on the same lines and in the same orchards in 1924. It is left to the discretion of the Instructor to include plots 5, 6, 7, 8 and 9, but where possible it is very desirable that they should be included. The ninth plot may be treated with any mixture which the instructor may consider it desirable to test.

Plot 1. Control—no treatment.

Plot 2. 2% Solution copper sulphate, to be applied as a spray towards the end of February.

Plot 3. Bordeaux Mixture.

8 lb. lime.
2¼ lb. copper sulph.
40 gallons water.

To be applied as a spray within 3 weeks after the petals have fallen

Plot 4. Berger's lime sulphur, ½ gallon (sp. gr. 1.3) to 30 gallons water, to be applied as a spray within 3 week after the petals have fallen.

Plot 5. Bordeaux mixture as for Plot 3. To be applied as a spray on two separate occasions (a) as soon as the petals show colour, but before they expand, and (b) within 3 weeks after the petals have fallen.

Plot 6. Bordeaux mixture as for Plot 3. To be applied as a spray on three separate occasions (a) as soon as the petals show colour, but before they expand; (b) immediately after the petals have fallen, and (c) not sooner than two nor later than three weeks after the applications of the second spray.

Plot 7. Mixture for Plot 4 to be applied at the times specified for Bordeaux mixture on Plot 5.

Plot 8. Mixture for Plot 4 to be applied at the times specified for Bordeaux mixture on Plot 6.

Plot 9. The treatment of this plot is left to the discretion of the Instructor. He may utilise it in testing a further spray mixture or in testing the comparative value of farmyard manure against the spraying treatment.

Each of the plots should comprise six trees, which must be clean and free from lichens. The trees should be of from 10 to 15 years' of age and should be sprayed under similar conditions. Outside rows should not be chosen, and none of the trees should be at the end of a row.

The treatment of the soil on each plot should be similar, i.e., some plots should not be in grass and others cultivated.

The results are to be returned thus—

(a) weight of fruit free from scab;

(b) weight affected by scab, and

(c) weight blemished otherwise than by scab,

2. *American Gooseberry Mildew.*

Effect of various spraying mixtures.

Plot 1. Control—at least six bushes—no treatment.

Plot 2. Ammonium Polysulphide, 1 part in 150 parts of water (6 tablespoonfuls in 3 gallons water). Soft soap at the rate of from 2½ to 3 oz. to 3 gallons water should be dissolved in the water used for making up the spray mixture before the ammonium polysulphide is added.

This mixture is to be applied as a spray on two separate occasions, viz.,

(a) immediately after pollination, and

(b) three weeks later.

Plot 3. 1st spraying-caustic soda (2 lbs. in 10 gallons water), to be applied just before growth starts in spring; 2nd and 3rd sprayings—washing soda (1 oz. to 1 gallon water) to be applied

(a) immediately after pollination; and

(b) three weeks later.

Plots 2 and 3 are to consist of at least 12 bushes, all to receive the same cultural treatment until September, 1924. Then half the number of bushes on each plot are to be "tipped" and the tips burned, while those on the other half are to remain untipped.

The variety should, where possible, be "Whinham's Industry," but in no case should any of the varieties known as "Ambers" be used.

Ammonium polysulphide should be obtained from some of the horticultural sundries men. The chemical supplied under this name by the chemists is not suitable.

If further bushes are available it is suggested that plots should be included to test the value, if any, of caustic soda alone and washing soda alone. The strengths of the solutions of these materials and the times of application are to be those stated in the case of Plot 3.

The results are to be returned thus :—

1. Total weight of berries free from mildew. } on each
2. ,, ,, ,, ,, affected by mildew. } bush.

3. *Manuring Apple Trees.* (Optional).

Variety.—"Bramley's Seedling."

Number of trees in each plot.—Not less than six.

Condition of trees.—Growing in grass for not less than four years and making little annual growth. Grass removed as hay annually.

Age.—Not less than ten years from planting.

Plot 1. No manure or other treatment.

Plot 2. Farmyard manure applied at the rate of 7 cwt. per tree

Plot 3. 6 lbs. sulphate of ammonia per tree applied in two dressings (a) 3 lbs. per tree when the earliest blossom buds show pink, and (b) 3 lbs. per tree immediately after petals have fallen.

Plot 4. 3 lbs. sulphate of ammonia per tree applied at the same time as (a) plot 3.

Plot 5. Trees reduced in size by pruning extremes of longest and highest branches.

Plot 6. Grass cut in plot and spread round trees as a mulch in June or July.

In plots one to five, inclusive, the grass should be cut at the usual time and removed as hay.

The experiment should be continued with the same trees for at least four consecutive years.

Recording Results.—The weight of fruit removed off each plot to be returned to the Ministry each autumn with remarks on size and grade. Sizing and grading to be in accordance with standards specified in Leaflet No. 6—" The Packing of Apples in Standard Boxes."

4. BEES.

" Acarine Disease " or " Isle of Wight." (Optional.)

Hives.—C.D.B. or other standard bar-frame.

Stocks.—At the commencement of the experiment they should be of approximately equal strength and freedom from disease.

Stock I.—No treatment and worked on lines usually adopted by the bee-keeper.

Stock II.—Requeened annually during May with a young Fertile Italian Queen.

Stock III.—To be treated only with Rennies Sulphur Smoke during autumn and spring. Queen to be of approximately equal vigour with that in Stock I.

Recording Results.—(a) Weight of honey removed.

(b) Number of swarms, date of swarming, etc.

(c) Date when crawling was first observed.

If this experiment is undertaken complete or in part it would be advisable to arrange to get the queens from one source. This could be readily done through the Ministry, if arrangements were made in time annually.

The experiment should be continued for at least four seasons if all the stocks are not affected before that time.

Circular No. 152.

December, 1923.

Cow-Testing Associations.

Sir,

I have to transmit, for the information of your Committee, the accompanying copies of the Ministry's revised Scheme No. 20, relating to Cow-testing Associations.

There is perhaps no sphere of the agricultural industry which offers greater scope for development than milk production, and it is estimated that if the yield of the milch cows in Northern Ireland, of which there are about 300,000, were increased by 200 gallons per year—which is not impossible of achievement and has been accomplished in Denmark, the United States of America and other dairying countries—an addition of £3,000,000 to the income of the farming community would be secured.

The only scientific method by which farmers can ascertain which of their cows are unprofitable and which should be retained for breeding purposes is by keeping accurate records of the yields of milk and butter-fat. The Ministry is anxious that every possible effort should be made to impress upon farmers the importance of effecting an improvement in their dairy herds, and to induce them to join existing Cow-testing Associations or to establish new Associations in their districts. To this end the Ministry invites the co-operation of your Committee, and trusts that they will direct their Instructors in Agriculture and Butter-making to continue to take every opportunity to explain the Scheme to owners of dairy cows and to recommend the formation of Associations.

The following table gives the number of Associations at work, the number of members enrolled, and the number of cows under test in Northern Ireland during each of the past three years :—

Year.	No. of Associations.	No. of Members enrolled.	No. of Cows under test.
1921	6	199	1,244
1922	13	441	3,109
1923	17	744	4,338

These results are encouraging, but the Ministry is of opinion that the existing number of Associations could be largely augmented in the forthcoming year, and, with this object in view, has decided to introduce several new features of a beneficial nature into the Scheme.

Heretofore the chief difficulty experienced in establishing Associations has been the securing of the prescribed minimum number of cows owing to the fact that the dairy herds in the Six Counties are small. To meet this difficulty the Ministry has decided to reduce the number of cows required to qualify an Association for recognition under the Scheme from 200 to 150,

It is further proposed, in addition to contributing to the Association a fee of 4s. per cow, to make a direct contribution next year at the rate of £40 per annum towards the salary of the Supervisor in the case of each Association whose work is regarded by the Ministry as satisfactory in every respect. These contributions from the Ministry, however, may be reduced after 1924. Under the Scheme each member must pay a fee of at least 3s. per cow, but it is hoped that members will contribute at a higher rate.

To stimulate interest among cow-owners the Ministry has decided to make a grant of £10 to each Association, to be expended in prizes offered at local exhibitions. Prizes will be awarded, in accordance with conditions detailed in the Scheme, for the best cows under test in each Association (1st prize, £4; 2nd, £3; 3rd, £2; and 4th, £1).

The Ministry also proposes to offer prizes, as follows, in 1924 for the Associations with the best records :—

I.	Confined to Associations established prior to 1924	First prize, £20. Second ,, £15.
II.	Confined to Associations established in 1924	First ,, £10. Second ,, £5.

At least one-third of the amount of the prize shall be paid by the successful Association to its supervior.

Further, any Cow-testing Association which procures an approved dairy Shorthorn bull with high milk records on both sire and dam's sides will be eligible for a subsidy from the Ministry equivalent to two-thirds of the cost price of the bull. Such bulls, however, will not be eligible for the award of county premiums. Applications for these subsidies should be made to the Ministry not later than 1st February.

Finally, the Ministry has decided to relieve Supervisors of the responsibility for testing milk samples and to establish in 1924 a system of central testing, i.e., all milk samples will be forwarded by the supervisor to the Ministry for test at the Chemical Research Station, Queen's University—this will enable Supervisors to devote more time to the general work of their Associations. Under this system the cost of milk sample bottles, boxes, carriage on samples, and spring balance for supervisor to check weighings, etc., will fall on the Associations and the Ministry trusts that the grants which have hitherto been made by County Committees of Agriculture towards the cost of equipment (apparatus, chemicals, etc.) will be given to Associations towards the cost of bottles, boxes, etc., in future.

The Ministry has issued a new poster relating to cow-testing, a supply of which has been forwarded to you under separate cover. It would assist the Ministry greatly in its campaign in this connection if you would be good enough to have the posters displayed in prominent public places, and, generally, to bring the

objects and advantages of the Scheme to the notice of as many as possible of the farmers and others interested in dairying in your county.

I am, Sir,
Your obedient Servant,
JAMES S. GORDON,
Secretary.

To the Secretary of each County Committee of Agriculture.

MEMORANDUM.

Improvement of Diary Cattle.

Supervisors of Cow-testing Associations are requested to note that with reference to Clause 2 (1) of the Ministry's Scheme No. 20, in which it is stated that a member of a Cow-testing Association must enter *all* his cows for test in the Association, the Ministry has decided that if a member of a Cow-testing Association has pure-bred cows which are being tested directly by the Ministry under the provisions of the Scheme for the Registration of Pure-bred Dairy Cattle (copy enclosed) it is not necessary that such cows should at the same time be entered for test in the Association. Cows which are suckling their calves throughout the whole milking period are also exempt from entry.

With regard to the case of pure-bred cows which have already been registered, it is not required that these cows should be entered for test in a Cow-testing Association. It is desirable, however, that such cows should be tested year after year, as the results of one year's testing do not reveal the value of the animals for milk, butter and breeding purposes—this can only be ascertained by having tests made during the life of each animal. In this connection your attention is directed to Clause 9 of the enclosed Scheme.

It should be clearly understood that for registration purposes pure-bred cows must be tested in accordance with the provisions of Scheme No. 20a, and subsequent milk records for pure-bred registered cows will be accepted only where the Ministry has been notified that such records are being kept and has been afforded an opportunity of examining the records and taking samples of the milk for butter-fat test. In other words, the records of pure-bred registered cows tested in a Cow-testing Association cannot be accepted for entry in the Ministry's Register.

The Ministry will be glad if you will bring these facts to the notice of the members of your Association owning pure-bred cows.

JAMES S. GORDON, Secretary.

March, 1924

To the Supervisor of each Cow-testing Association.

Circular No. 162.

MEMORANDUM.

Cow-Testing Associations.

ENTRY OF COWS.

The Ministry has carefully considered the question of the re-entering in an Association of cows which have failed to yield 600 gallons of milk in each of two successive milking periods, and has decided that a member may enter such cows for further test if he wishes. If, however, a member intends to dispose of such a cow for milking purposes after the end of the second lactation period the animal should be tattooed "R.E.J." in the ear for the purpose of identification. In such cases the marking would be done by the supervisor of the Association in which the member concerned was enrolled.

The Ministry has also looked into the question of the entering of cows, bought by members of Cow-testing Associations with a view to re-sale in a few weeks, which calve before being re-sold. It has decided that every such cow should be entered, and if the animal is disposed of within *four* weeks after calving the Association should refund to the member the fee paid in respect of the animal. The new purchaser, if a member of a Cow-testing Association, would thus be able to continue the record of the milk yield of the animal for the remainder of the lactation period.

The general rule in regard to the entering of cows in an Association may be conveniently expressed as follows :—

Every cow which calves on the farm throughout the year must be entered and fees paid in respect thereof, with the exception of (a) pure-bred cows being tested directly by the Ministry, (b) cows suckling their calves throughout the whole milking period, and (c) cows which have failed to yield 600 gallons in each of two successive milking periods, if the owner does not wish to test the animals for a further period.

JAMES S. GORDON, Secretary.

11th March, 1924.

To the Supervisor of each Cow-testing Association.

MEMORANDUM.

With regard to the scheme of the Shorthorn Society of Great Britain and Ireland for the grading up of non-pedigree Shorthorn cattle for ultimate entry in Coates's Herd Book, you are informed that, as a result of representations made to them by the Ministry, the Society have agreed to allow the Ministry's Senior Live Stock Inspector (who is a member of the Society) to carry out inspections of foundation dams, and to accept his certificate in the event of the animals being of Shorthorn descent and of suitable type and

conformation. Heretofore it was necessary that all inspections of this nature should be carried out by an Officer of the Society.

The Ministry is of opinion that this arrangement will encourage breeders of non-pedigree Shorthorns to grade up their cattle for entry in Coates's Herd Book, and accordingly will be glad if you will kindly bring to the notice of members of your Association who are, or are likely to be, interested in the grading up scheme the following particulars in connexion with the procedure to be adopted with regard to grading up non-pedigree Shorthorns :—

When a member of your Association desires to grade up non-pedigree Shorthorns for the Shorthorn Society's Register, he should, in the first instance, apply to V. H. Seymour, Esq., Secretary, Shorthorn Society of Great Britain and Ireland, 12, Hanover Square, London, W. 1, for the necessary forms for registration, and also for a form of application for membership of the Society, in the event of the breeder concerned not being a member already.

The forms for registration, when completed by the breeder, should, together with the necessary fees, then be forwarded to these Offices, and arrangements will be made to have the animals concerned inspected by the Ministry's Senior Live Stock Inspector.

When the inspections have been made the forms will, provided the animals have proved satisfactory, be duly certificated by that Inspector, and forwarded from these Offices to the Shorthorn Society for entry in the Society's grading up Register.

The regulations and instructions governing entries in the Society's Register are fully set out on the form for registration.

May, 1924.

To the Supervisor of each Cow-testing Association.

MEMORANDUM.

With regard to the grading up of non-pedigree Shorthorn cattle for ultimate entry in Coates's Herd Book, the Ministry has arranged, in connection with the grading up scheme of the Dairy Shorthorn Association, that this Association will accept the Ministry's Senior Live Stock Inspector's certificate in regard to foundation dams, as is done in similar cases by the Shorthorn Society of Great Britain and Ireland.

Full particulars regarding the Dairy Shorthorn Association's grading up scheme can be obtained on application to H. J. Tilly, Esq., Secretary, Dairy Shorthorn (Coates's Herd Book) Association, 16, Bedford Square, London, W.C.1. It is to be under-

stood, of course, that persons desirous of participating in this scheme must become members of the Association.

The Ministry will be glad if you will bring these facts to the notice of any members of the ..... Cow-testing Association who are interested in the grading up of non-pedigree Shorthorns.

17th September, 1924.

To the Supervisor of each Cow-testing Association.

MEMORANDUM.

REGISTRATION OF PURE-BRED DAIRY CATTLE.

With regard to the Year Book kept by the Dairy Shorthorn (Coates's Herd Book) Association, the Ministry noted that bulls were eligible for registration in this Year Book, provided that the following condition was complied with in respect of *both* its dam and sire's dam :—

Hold a yearly record, published in the Association's Year Books, up to mid-day, October 1st, 1919; or after that date a record within 315 days after calving (already published or accepted as eligible for publication in the next Year Book) as under :—

(1) Cows, 4 years old and upwards at date of calving	8,000 lb.
(2) Cows, over 3 years and under 4 years old at date of calving	6,000 ,,
(3) Heifers, 3 years old and under at date of calving	5,000 ,,

With regard to the foregoing qualification the Ministry suggested to the Association that it might see its way to accept the Ministry's records in the case of cows entered in the Ministry's Advanced and Ordinary Pure-bred Shorthorn Registers with regard to (1) and (2) in the above-mentioned Rule, provided, of course, that the owners concerned sent forward the necessary milk records to the Association for entry in the Year Book and that such records were accepted and were, moreover, up to the Association's requirements. To this proposal the Council of the Dairy Shorthorn Association agreed and, accordingly, this Association will, in future, be prepared to accept from Shorthorn breeders in Northern Ireland the records of cows which have been accepted by the Ministry for entry in their Advanced and Ordinary Pure-bred Shorthorn Registers, and, if the milk yields, etc., are up to the Association's standard the records will be entered in the Association's Year Book and the male progeny of the animals will thus become eligible for registration in the Year Book of the Association.

The Secretary and address of the Association is :—H. J. Tilly, Esq., Dairy Shorthorn (Coates's Herd Book) Association, 16, Bedford Square, London, W.C.1.

August, 1924.

Horse Breeding Scheme, 1924.

This scheme replaces the system of mare nominations. Under Part (1) of the scheme a limited number of stallion premiums may be offered for competition in each County. Expenditure under this Part of the scheme will be met from the joint fund. Part (2) provides for the award of a small number of subsidies to induce persons to purchase suitable stallions for districts already inadequately supplied in this respect. The cost of this portion of the scheme will be borne by the Ministry. The regulations are as follow :—

PART (I.)—PREMIUMS FOR COMPETITION.

(1) Only Thoroughbred Stallions and Clydesdale Stallions will be eligible to compete for premiums, unless in some very exceptional case where it is shown to the satisfaction of the Ministry that a sire of another breed would be more suitable for a particular district. In such an exceptional case the attendance of the stallion at the central exhibition may, with the approval of the Ministry, be dispensed with.

(2) Each stallion entered for the premium competition must be licensed under the Horse Breeding Act, 1918, and must be certified by the Ministry as up to the standard required for a premium.

(3) Premiums will be awarded by Counties and competition will be confined to

(*a*) Stallions already standing in the County.

(*b*) Stallions whose owners undertake to stand them in the County in the event of a premium being awarded.

(4) The maximum value of a premium will be £70 for a Thoroughbred and £45 in the case of any other stallion.

(5) No stallion will be awarded more than one premium in the same season.

(6) Stallions entered for premiums will be examined at one centre by Inspectors appointed by the Ministry and a number will be selected for each County and placed on a list in order of merit. From this list the County Committee will award the available premiums being guided by three considerations :—

(1) Position of stallion in order of merit.

(2) Breeding merits as evidenced by fruitfulness and quality of progeny.

(3) The necessities of each district.

(7) The premium will be paid by the County Committee as soon after the end of the service season as the Committee are satisfied that the regulations have been complied with. If a lesser number of mares is served than that prescribed by clause 15 the value of the premium will be proportionately reduced.

PART (2)—PURCHASE OF STALLIONS.

(8) Every stallion purchased under this scheme must be specially approved by the Ministry and must be licensed under the Horse Breeding Act, 1918.

(9) The purchaser of an approved stallion may be granted a subsidy of such an amount as may be approved by the Ministry.

(10) Applicants for purchase subsidies must complete the prescribed form and submit it to the County Committee of Agriculture. All applications recommended by County Committees will be considered by the Ministry, but applicants are warned that no application must be regarded as approved until the Ministry has conveyed its sanction in writing, and persons purchasing in anticipation of the Ministry's approval will do so at their own risk.

(11) The purchaser to whom a subsidy is granted shall undertake to retain the stallion in the district for a period of five years for service on the specified conditions and shall agree not to sell, lease or otherwise dispose of the stallion during the aforesaid period, except with the consent of the County Committee and the Ministry. In any case where the sale or disposal of a stallion is sanctioned as before mentioned the Ministry shall have the option of purchasing at a price equal to the amount the purchaser paid less the subsidy.

(12) Only Thoroughbred or Clydesdale Stallions may be purchased under these regulations, unless in some very exceptional case where it is shown to the satisfaction of the Ministry that a sire of another breed would be more suitable for a particular district.

(13) A subsidy will not as a rule be approved for the purchase of a stallion over six years old, but the Ministry may waive this requirement in the case of a stallion which has shown exceptional breeding merits or for other sufficient reason.

(14) Stallions purchased under these regulations may compete for premiums under Part I. of this scheme in any season in which such premiums are offered on the same conditions as other stallions.

PART (3)—GENERAL.

The following regulations will apply to all stallions awarded premiums under Part I. of this scheme and during the period of the agreement to all stallions purchased under Part II. of the scheme.

(15) The service season shall be reckoned from 1st March to 31st July, and during the season each Thoroughbred Stallion must serve twenty mares and each Clydesdale thirty mares (exclusive in each case of owner's mares), at such fees not exceeding £3 in the case of a Thoroughbred Stallion and £2 in the case of a stallion of any other breed, as may be fixed by the County Committee. Where less than the prescribed number of mares has been served the value of the premium may be proportionately reduced.

The fees specified shall not apply to mares entered or eligible for entry in any recognised stud book.

(16) A County Committee may make such regulations as it considers desirable for the purposes of this scheme, and in particular in regard to (*a*) reserving a proportion of the services for mares, the property of farmers below a certain valuation; (*b*) enabling a stallion owner to require a certificate of soundness in respect of any mare brought for service; (*c*) requiring certificates of soundness in respect of all mares brought for service under the Scheme; (*d*) requiring stallions to visit certain centres during the season.

(17) The owners of stallions shall keep such records of mares served as may be prescribed by the Ministry, and these records shall, if required, be submitted to the County Committee or to the Ministry for examination.

(18) The decision of the Ministry on all matters arising out of this scheme shall be final and conclusive.

September, 1923.

Circular No. 156.

16th January, 1924.

Live Stock Breeding Act (Northern Ireland), 1922.

Sir,

The attention of persons in Northern Ireland who intend to exhibit bulls at the forthcoming Spring Sales (see list at end) is directed to the following matters relating to the licensing of bulls under the above-mentioned Act :—

I. *Bulls born on or before 28th February, 1923.*

All bulls from Northern Ireland born on or before 28th February, 1923, should have been licensed by 1st January, 1924. An exhibitor who desires to dispose of such a bull at a Sale must bring his licence to the Sale in order that, if the animal is sold, the purchaser's name may be endorsed upon the licence by the Ministry's representative who will be in attendance.

When entering a licensed bull for a Sale the owner should insert the number of his licence on his entry form so that the animal may be identified at the Sale.

II. *Bulls born in March, April, May, June, July and August, 1923.*

Bulls of this age from Northern Ireland must be licensed by 31st March, 1924. Exhibitors of such bulls must apply to the Ministry *not later than 1st February, 1924*, on the prescribed form, for a licence in respect of each bull. All applications must be accompanied by the prescribed fee of 5/- for each animal.

An applicant for a licence should state on his application form the name of the Sale at which he will exhibit his bull. If he is in doubt about exhibiting the bull at a Sale, he should name on his application form one of the local centres instead of the Sale and, on receipt of the form, the Ministry will notify him of the date and hour of inspection at that centre. This matter is important as the Ministry cannot undertake to inspect a bull subsequently in the event of the owner failing to present the animal for inspection at the Sale or the local centre named by him on his application form.

When entering for a Sale a bull not already licensed the owner should insert on his entry form the number of his application to the Ministry for a licence in order that the animal may be identified at the Sale. This number will be given in the Ministry's letter acknowledging applications and remittances. Any applicant who does not receive an acknowledgment within one week should write to the Ministry.

If a breeder desires to enter a bull at both Londonderry and Balmoral he should name both Sales on his application form.

Application forms and further particulars can be obtained from the Ministry.

III. *General.*

A bull in respect of which the Ministry has already issued a licence will not, of course, again be inspected for a licence at a Sale, but a card will be put up over the stall indicating that the animal is licensed. Where a person in Northern Ireland purchases such a bull he should obtain the licence from the vendor and bring it to the Ministry's office in the Sale-yard for endorsement. He should also bring the auctioneer's docket indicating that he is the purchaser.

A bull born in March, April, May, June, July or August, 1923, in respect of which the owner has applied to the Ministry for a licence *on or before 1st February, 1924*, will be inspected at the Sale and, if the animal is regarded as up to licensing standard, a card to that effect will be displayed over his stall at the Sale. The purchaser or exhibitor of such a bull should bring the auctioneer's docket to the Ministry's office in the Sale-yard in order that a licence may be issued to him in case the bull has been passed and is to stand in Northern Ireland.

Where a person in Northern Ireland purchases at a Sale a bull of any age coming from the Irish Free State either the purchaser or the exhibitor should apply for a licence at the Ministry's office in the Sale-yard and should produce the auctioneer's docket.

The following are the names of the Sales recognised by the Ministry as centres for the inspection of bulls for licences, in addition to the ordinary local centres :—

1. Royal Ulster Agricultural Society's Sale at Balmoral (March, 1924).
2. North-West of Ireland Agricultural Society's Sale at Londonderry (March, 1924).
3. Messrs. Robson's Sale at Belfast (March, 1924).
4. Messrs. Hunter's Sale at Coleraine (March, 1924).
5. Mr. Robert Wilson's Sale at Moy (February, 1924).
6. Messrs. Allam's Sale at Belfast (March, 1924).
7. Antrim Cow-testing Association's Sale at Antrim (February, 1924).

I am, Sir,
Your obedient Servant,
JAMES S. GORDON,
Secretary.

28th June, 1924.

Sir,

I am desired by the Minister of Agriculture to transmit herewith further supplies of the Ministry's leaflet on the dishorning of calves and to emphasise again the great importance of steps being taken to ensure that, as far as possible, all store cattle intended for export are hornless. The Minister would, therefore, be glad if you would be so good as to distribute these leaflets and at the same time impress on the recipients that the matter is one which should be constantly kept in mind so that the practice of dishorning may become more general. It should, of course, be clearly understood that heifers of good shape and colour, which are intended for breeding purposes, should not be dishorned. Breeding heifers of the Shorthorn type are more valuable with horns than without them.

I am to add that further copies of the leaflet may be obtained on application to the Ministry.

I am, Sir,
Your obedient Servant,
JAMES S. GORDON,
Secretary.

.....

.....

.....

5th May, 1924.

Weeds and Agricultural Seeds (Ireland) Act, 1909.

Sir,

I have to state that the Ministry proposes during the coming summer to carry out a Scheme of Inspections with the object of securing the destruction in Northern Ireland of noxious weeds in accordance with the provisions of Part 1 of the above-mentioned Act.

As a preliminary to the conduct of such a campaign the Ministry proposes to make an Order for each County under Section 1 (1) of the Act setting forth the names of weeds that are regarded as noxious. It should be stated, for the guidance of your Council, that under the Act ragwort, charlock, coltsfoot, thistle and dock may be scheduled as noxious weeds. The Ministry attaches the utmost importance to the scheduling of ragwort, thistle and dock.

The Ministry will be glad to have the concurrence of the County Council to proceed as proposed in County ..... The consent of the ..... County Council should be signified by a Resolution of the Council and a copy of the Resolution, under the Council's seal should be transmitted to the Ministry. Kindly bring this matter before your Council at the earliest practicable date and forward the sealed copy of the Resolution, if adopted.

The Council will recollect that similar measures were taken previously in conjunction with the Department of Agriculture and Technical Instruction.

I am, Sir,
Your obedient Servant,
J. V. COYLE.

The Secretary to each County Council and
County Borough Council.

Circular No. 149.

January, 1924.

Fertilisers and Feeding Stuffs Act, 1906.

Sir,

I have to state that the Ministry has become aware of the fact that misconceptions appear to exist in the case of certain fertilisers as to the definite requirements of Section 1 (1) of the above-mentioned Act which is as follows :—

" Every person who sells for use as a fertiliser of the soil any article which has been subjected to any artificial process in the United Kingdom, or which has been imported from

abroad, shall give to the purchaser an invoice stating the name of the article and what are the respective percentages (if any) of nitrogen, soluble phosphates, insoluble phosphates, and potash contained in the article, and the invoice shall have effect as a warranty by the seller that the actual percentages do not differ from those stated in the invoice beyond the prescribed limits of error."

1. Phosphatic Fertilisers.

As regards the invoice to be given in the case of *sales of phosphatic manures*, it is pointed out that, in accordance with the provisions of Section 10 (1) of the Act, the percentages of soluble and insoluble phosphates which must be stated in accordance with Section 1 (1) mean respectively the *percentages of tribasic phosphate of lime* which has, and that which has not, been rendered soluble in water or other solvents of the prescribed strength as specified in the invoice.

In respect of this provision, the percentages referred to are sometimes stated in terms of phosphoric acid. This practice is to be deprecated as one which causes confusion in the minds of purchasers of phosphatic fertilisers. The Ministry must, therefore, request that percentages on invoices be given as required by the Act, *i.e.*, *in terms of tribasic phosphate of lime* and not in terms of phosphoric acid.

The attention of the Ministry has been drawn to the fact that considerable doubt exists in the minds of both purchasers and sellers of phosphatic fertilisers concerning the giving of solubility guarantees. Under the Act the percentage of soluble phosphate must be given in the case of the two fertilisers, superphosphate and basic slag.

In the case of superphosphate, the percentage of soluble phosphate must be stated in the invoice as water soluble phosphate; and in the case of basic slag, the Fertilisers and Feeding Stuffs (Ireland) Regulations, 1910, require that the percentage must be stated as citric soluble phosphate.

It should be noted that neither in the Act nor in the Regulations is the percentage of citric soluble phosphate required to be stated for any phosphatic fertiliser other than basic slag. The Ministry, therefore, wishes to point out that the citric acid test should not be taken as a method of apprising the value of phosphatic fertilisers other than basic slag.

2. Nitrogenous Fertilisers.

In the case of sales of nitrogenous fertilisers it is found that in some instances the invoice does not specify the *percentage of nitrogen*, the percentage of ammonia being given instead. The tendency of this practice, which is an evasion of the law, is to create in the mind of the buyer the erroneous impression that the fertiliser contains a high percentage of nitrogen. The percentage of nitrogen (not ammonia) must, therefore, be given on the invoice in order to comply with the terms of the Act.

3. Potassic Fertilisers.

Invoices, given in connection with sales of *sulphate of potash*, frequently state the purity percentage only and do not disclose the *percentage of potash*. By this means purchasers are led to assume that the fertiliser contains a much higher percentage of potash than is actually the case. The percentage of potash, as required by the Act, and not the purity percentage, should, accordingly, be stated on all invoices.

4. Feeding Stuffs.

Section 1 (2) of the Act requires that the invoice to be given in the case of a sale of an artifically prepared feeding stuff shall include the respective percentages (if any) of oil and albuminoids contained in the article. It is, however, not an uncommon occurrence to find that, instead of showing the percentage of oil and the percentage of albuminoids by two separate figures, the invoice contains merely a single figure to represent both these percentages combined—which is a serious contravention of the Act.

Examples of the various irregularities to which attention is now drawn are appended.

I have to add that after this date the Ministry will not hesitate to authorise prosecutions for failure to comply with any of the above-mentioned requirements of the Act or the Regulations made thereunder, and it may be pointed out that by Section 6 of the Act non-compliance with the provisions in question may entail a penalty of £20 for a first offence and £50 for subsequent offences.

I am, Sir,
Your obedient Servant,
JAMES S. GORDON,
Secretary.

To the Person or Firm named in the Address.

Examples of Incorrect and Correct Methods of Stating Percentages :—

1.—SULPHATE OF POTASH.

Incorrect :—
Sulphate of Potash, 96%.

Correct :—
Sulphate of Potash, 52% Potash.

2.—SULPHATE OF AMMONIA.

Incorrect :—
Sulphate of Ammonia (ordinary) Ammonia 25¼%.
Sulphate of Ammonia (neutral) Ammonia 25¾%.

Correct :—
Sulphate of Ammonia (ordinary) Nitrogen 20.8%.
Sulphate of Ammonia (neutral) Nitrogen 21.2%.

3.—SUPERPHOSPHATE.

Incorrect:—

Water soluble phosphoric acid 16.0%.

Correct:—

Water soluble phosphate 34.9%.

4.—DECORTICATED COTTON CAKE.

Incorrect:—

Decorticated Cotton Cake 48%.

Correct:—

Decorticated Cotton Cake—

Oil 8%.

Albuminoids 40%.

COMMISSION ON THE NATURAL AND INDUSTRIAL RESOURCES OF NORTHERN IRELAND.

Report on the Northern Ireland Egg Industry.

To the Right Hon. Sir James Craig, Bart., D.L., M.P.,
Prime Minister of Northern Ireland.

Sir,

In our survey of the field of enquiry covered by our Terms of Reference we formed the opinion that the development of the Northern Ireland Egg Industry was a subject to which we might profitably direct early attention. Accordingly, we forthwith invited representatives of the various interests concerned to furnish us with evidence on the subject, and, on acceptance of our invitation, arranged for the hearing of the evidence of each witness at the earliest convenient date. The conclusions we have reached, after hearing the whole of the evidence, appear to us to call for immediate presentation and, acting on that view, we now respectfully beg to present the following Report. A list of the witnesses whose evidence we have heard is given in Appendix A.

2. The evidence procured may conveniently be classified under the following heads :—

(1) The importance of the Egg Industry as affording a means of livelihood, either whole or partial, to a large proportion of the Northern Ireland populace.

(2) The necessity of early action on the part of the State to check the present practice of exporting stale and improperly packed eggs from Northern Ireland to Great Britain.

(3) Suggestions for the development of the industry.

Importance of the Egg Industry to Northern Ireland.

3. In regard to (1), we have been strongly impressed by the export statistics furnished by one of the witnesses. Unfortunately, it has not been possible to procure such statistics for Northern Ireland separately prior to 1922, but, taken in conjunction with the separate Northern Ireland figure for 1923, the all Ireland

figures for the year 1918, 1919 and 1920, suggest that, in the years prior to the segregation of the statistics Northern Ireland enjoyed approximately one-third of the export trade from the whole of Ireland. The figures in Appendix B. show that for the year 1922 the value of the eggs exported from Northern Ireland was £3,359,623.

Necessity of Early Action on the Part of the State.

4. A great portion of the evidence falls under heading (2), and the situation as revealed is one which, in the opinion of the Commission, calls for immediate action by the State. The witnesses were unanimous in stating that the present practice on the part of large numbers in all sections of the trade of holding up eggs with the object of securing higher prices at particular periods of the year and the indifferent and careless methods of packing eggs for export, constitute a menace to the Northern Ireland egg trade; a menace which is rendered increasingly serious by the effective measures recently taken by egg-exporting countries in all parts of the world to establish a market in Great Britain (*vide* Appendix C. which shows the increasing extent of Foreign and Colonial competition in the United Kingdom). Taken together these factors have resulted in the rejection of Ulster eggs in centres in Great Britain where previously they had enjoyed a high reputation. Such a state of affairs is the more regrettable when it is remembered that Ulster possesses advantages over her competitors, which, if turned to proper account, would place her in a commanding position in the British market. In point of quality the Irish egg is considered to excel any other imported into Great Britain, and geographical proximity should enable it to be placed on the English market in a fresher state than is practicable in the case of the Foreign or Colonial egg. Despite these advantages, there is abundant evidence to show that, as at present conducted, the Northern Ireland egg industry is threatened with the loss of its most valuable market.

5. We have considered the practicability of averting the threatened danger by an intensified effort on the part of the Northern Government to bring home to those engaged in the industry the disastrous consequences of the practices to which allusion has been made. While much might be done in this way, we are faced with the fact that a large proportion of the eggs exported from Northern Ireland pass through the hands of several intermediaries, and that, whilst each intermediary has a financial interest in the business, some of them are not sufficiently identified with the industry to forego, in the interests of the industry as a whole, the opportunity of making an extra profit by holding-up eggs during a rising market. We do not consider that any effort of the kind referred to would have the desired result, viz., the prevention of the export of even a single case of stale or badly packed eggs from Northern Ireland. No half measures will enable the Northern Ireland Egg Industry to attain the position which

it should occupy. The short-sighted policy of a comparatively few traders would largely neutralise the efforts of others to place the industry in that position. We have, consequently, been forced to the conclusion that a point has been reached at which, in the interests of the industry as a whole, the State should take such steps as will tend to secure that all eggs produced in Northern Ireland, and either placed on the market for consumption at home or exported for consumption in Great Britain or abroad, shall leave the hands of the wholesaler or exporter in such condition and packed in such a manner that the consumer will receive them in a perfectly fresh and clean state. To this end we recommend that, as from a date to be appointed, every wholesaler and exporter of eggs shall be required to hold a licence from the Northern Ireland Ministry of Agriculture, which will be issued to him only on his undertaking to conform to certain specified conditions. Under the designation "wholesaler," as here used, we include persons (excluding employees), firms, and companies, whose business involves the packing and/or grading of eggs. The conditions upon which we recommend that a licence should be granted are as follows :—

(1) The licensee shall, as from the date on which his licence is issued, provide and use such premises for the conduct of his business as in the opinion of the Northern Ireland Ministry of Agriculture are suitable for the purpose.

(2) The licensee shall, immediately before consigning them to his customers, ensure that all eggs are perfectly clean, and shall subject each of them individually to the "light test" for freshness and withhold from circulation any that do not satisfactorily pass this test.

(3) The licensee shall pack all eggs in a manner and in a form of case to be prescribed by the Northern Ireland Ministry of Agriculture, and shall mark the date of their despatch from his premises on the label attached to each packing case.

6. It has been pointed out to us that large quantities of eggs are packed for despatch by wholesale egg merchants and exporters in the market places where they are purchased and that, in many instances, owing to the lack of covered accommodation, the eggs are packed in the open in all states of the weather. We consider that it should be made obligatory on all Urban Councils and other Authorities in Northern Ireland owning market places where eggs are handled in any considerable quantities, to provide, where not already provided, ample and suitable packing sheds on reasonable terms for the use of buyers whose practice it is to pack their eggs on the spot. It will be obvious that such sheds will require to be made available before the licensing system which we have recommended can be put into general operation.

7. We consider that thorough compliance with the above conditions on the part of all licence holders and market-owning authorities will not only protect the Northern Ireland Egg Industry from the danger at present threatening it, but, by elimin-

ating dirty and stale eggs from all consignments despatched to Great Britain, will also engender a confidence in the minds of British egg merchants and consumers that will stimulate the demand for Ulster eggs and ultimately lead to increased exports and relatively higher prices. This opinion is shared by all the witnesses whom we have consulted on the point, and there can be no doubt that State action, along the lines we have recommended, would be welcomed by the organised interests in the Northern Ireland egg trade. The conditions which we seek to impose upon wholesalers and exporters are neither impracticable nor unreasonable, for they correspond to the methods adopted voluntarily by our Danish competitors and by a number of Northern Ireland firms.

8. Before leaving the portion of the evidence relating to State action directed to safeguarding the position of the industry in the markets of Great Britain, it may be well to refer to several suggestions made by witnesses, which, while commendable from certain points of view, do not appear to us at once practicable and likely to benefit the industry as a whole.

9. We have examined the possibility of instituting a system which would enable us to locate the point where individual eggs, found to be stale, had been held up. In this connection we have sought the view of witnesses on the advisability of making it obligatory on all poultry owners to stamp eggs intended for sale with the date on which they were laid. Even assuming that such an obligation were faithfully discharged by every poultry owner, the indication of age in the manner suggested is open to the serious objection that, whilst an egg a week old would be regarded by all engaged in the trade as thoroughly fresh, the average consumer would not so regard it and would, in consequence, purchase an " undated " egg in preference. We consider that this argument conclusively disposes of the suggestion as likely to prejudice, rather than to assist, the egg industry. In the same connection one witness suggested that every poultry owner, who disposes of eggs by sale or in exchange for other commodities, should be given a registered number which he should be compelled to stamp on each egg sold or exchanged by him. In our opinion, no advantage would follow from such an arrangement and it might lead to disadvantages. In the first place, it would not enable the enquiring body or authority to locate the point at which the circulation of a particular egg through the customary trade channels had been unduly delayed, and it could not fairly be assumed that, in the case of an egg found to be stale, the delay was occasioned by the poultry owner whose registered number appeared on the egg. In the second place, the stamping of Northern Ireland eggs might result in their being regarded as " foreign " by many consumers in Great Britain, especially as the Bill recently introduced in the Imperial Parliament provided for the stamping of each egg imported into Great Britain from abroad, without making such

provision in respect of eggs produced in Great Britain or Northern Ireland. After exhaustive consideration of the subject, we have come to the conclusion that it would be inadvisable at present to introduce into Northern Ireland any system of stamping.

10. Another suggestion which has been made to us is that wholesale egg merchants and egg exporters should be required to mark " cold-stored " and " pickled " eggs in such a manner as would indicate that they had been so treated. We recognise the desirability of ensuring that eggs of these descriptions should not be allowed to circulate as " new-laid " or " fresh," as these terms are ordinarily understood. Nevertheless, we consider that any system of stamping is open to the objection that an egg so stamped is at a serious disadvantage in competing in the markets of Great Britain with an unstamped egg of the same description. For this reason we are unable to recommend the marking of " cold-stored " or " pickled " eggs in the manner suggested, but, as a measure of protection, we consider that wholesale merchants and exporters should be required to mark " cold-stored " or " pickled " on the packing case, and that all such eggs, when exposed for sale by retail, should bear a suitable label indicating that they were " cold-stored " or " pickled." The latter requirement should apply also to eggs imported into Northern Ireland. In appropriate cases the obligation to mark the packing case might be incorporated as one of the conditions governing the issue of a licence by the Ministry of Agriculture.

11. All the witnesses examined favoured the introduction of a system of grading by size and sale by weight. We understand that such a system is to some extent already in operation, and that the results are satisfactory. Whilst we are in agreement with the witnesses that sale by weight ensures a fairer return to the poultry-keeper and provides a more equitable basis for transactions between the retailer and the consumer, we do not consider that the general application of the system is a task to be undertaken by the State. In our opinion the matter is one that should be left to the organised interests of the trade.

Development of the Industry.

12. Whilst we believe that the foregoing recommendations, if carried out, will materially contribute to the general prosperity of the industry, their primary object is to safeguard the reputation of the Ulster egg in the eyes of the consumer. In the present section of our Report we deal with the purely development aspect of the subject.

13. The production of eggs in Northern Ireland can be increased in two ways: (1) by increasing the number of poultry kept,

and/or, (2) by securing a higher output per head of the poultry population.

14. We are informed that the number of poultry in Northern Ireland at present is estimated to be 5½ millions, representing approximately 250 birds per 100 acres of arable land. We understand that County Monaghan carries 367 birds per 100 acres. We see no reason why the poultry population of each of the Six Counties should not be increased to the same density as in County Monaghan. By this means alone the output of eggs might be increased by almost 50 %.

15. The average output of eggs per bird in Northern Ireland has been put at 100 per annum. That this figure can be substantially increased by the exercise of care in the selection of the birds kept, by the breeding and distribution of birds with egg-laying records, and by the provision of better housing and the use of the most suitable poultry foods, is a matters not open to doubt. In the course of the years 1913 to 1923 the average output of eggs per bird in Irish egg-laying competitions rose from 120 to 189 per annum. Whilst these figures show what is possible in the direction of securing increased output, they, unfortunately, cannot be regarded as evidence of a corresponding increase in the average output of the area taken as a whole. Doubtless they do reflect some all-round improvement, but we are convinced that, if the egg industry of Northern Ireland is to attain to the position which its natural advantages suggest that it should occupy, the Government, on the one hand, and the poultry owners, on the other, must intensify their present efforts along the lines of improved education.

16. We understand that the Northern Ireland Ministry of Agriculture is desirous of putting into operation a scheme,

(a) to pay a subsidy to certain selected poultry-keepers throughout Northern Ireland, who undertake to conduct their farms as demonstrational poultry farms.

(b) to organise demonstrational marketing exhibits at the important Agricultural Shows held in Northern Ireland, and

(c) to institute a campaign of propaganda.

The Ministry also contemplates increasing the present number of Egg Stations, and has decided to appoint a Research Officer qualified in poultry diseases. We are further informed that the Ministry has inaugurated a series of lectures by experts, which are being held throughout the Six Counties during the present winter.

17. We are of opinion that action along the lines contemplated by the Ministry is urgently needed, and that the results will amply repay such expenditure as may be incurred by the Government in giving effect to the Ministry's proposals. All the evidence we have heard points to the necessity of providing improved educational facilities in every part of Northern Ireland in all matters appertaining to the poultry industry. Without increased education on the subject poultry-keeping must in great part, remain comparatively uneconomic, and, for that reason, the process of development must be slow and largely haphazard.

18. In our examination of the subject on its educational side we have investigated certain suggestions made by the witnesses, which, if incorporated as part of a Government programme, might appreciably raise the present standard of education in poultry-keeping. Of these suggestions only two appear to us worthy of being carried into effect. As the complement of the Ministry's proposals, we recommend that an effort should be made to encourage the pupils attending Rural Schools to take an interest in agricultural subjects, and, in its endeavours to educate the poultry-keepers in matters affecting poultry, the Ministry of Agriculture should avail itself more fully of the assistance of the Public Press. Apart from these suggestions we feel that the proposals of the Ministry, as stated above, are sufficiently comprehensive for present needs.

19. In the course of the evidence several witnesses have referred to the disadvantage at which those engaged in the egg trade in Northern Ireland are placed owing to the relatively high rail and steamship freights. Reference has also been made to the insufficiency of railway staff in certain centres on market days, and to the practice, on the part of the majority of the Shipping Companies, of loading and unloading eggs by means of rope slings, instead of by the improved method of wooden platforms. We believe that the removal of any such disadvantages would operate in the interests of the Railway and Steamship Companies as much as in those of the egg industry, and we suggest that the Government Department or Departments concerned should seek an early opportunity of investigating the substance of the compliants referred to and of conferring with the Companies, where necessary, with a view to their removal.

Conclusion.

20. In submitting this Report we desire to emphasise the necessity, in our opinion, of urgent action along the lines we have indicated. Both from the point of view of safeguarding the

present position and of promoting the development of the industry, such action appears to us to be essential.

We have the honour to be, Sir,

Your most obedient Servants,

(*SIGNED*). CHARLEMONT (Chairman).
WILLIAM ADDIS.
ROBERT ARMSTRONG, Jun.
T. H. BURN.
J. KAYE CHARLESWORTH.
J. F. CLEAVER.
H. CONACHER.
GEO. M. DONALDSON.
FRANK GILLILAND.
JAMES S. GORDON.
EDWIN D. HILL.
J. HILL-DICKSON.
S. J. HUTCHINSON.
OSWALD JAMISON.
SAMUEL KELLY.
WM. LOGUE.
H. O. MEREDITH.
ROBERT M'CLUNG.
W. J. M'GUFFIN.
JAMES A. PRINGLE.
W. D. SCOTT.
RUPERT STANLEY.
DEALTRY P. THOMPSON.
D. WRIGHT.

R. R. BOWMAN. } Joint Secretaries.
W. CRONE. }

Twenty-third Day of February, One Thousand Nine Hundred and Twenty-four.

Appendix A.

Witnesses.

Date of Attendance.	Name of Witness.	Description of Address
10th October, 1923.	Mr. J. Adams,	Secretary, Ulster Agricultural Organisation, Ltd.
,,	Mr. P. O'Neill, J.P.,	Manager, Co-operative Wholesale Society, Ltd., Armagh.
,,	Mr. J. R. Campbell.	Manager, Dervock and District Co-operative Poultry Society, Ltd.
24th October, 1923.	Lt.-Col. Macrory, D.S.O.,	Poultry Farmer, Limavady.
7th November, 1923.	Miss H. M. L. Murphy,	Head of the Poultry Research Division, Ministry of Agriculture, Northern Ireland.
,,	Mr. Sydney Smith,	Principal Marketing Inspector, Ministry of Agriculture, Northern Ireland.
5th December, 1923.	Mr. T. Gracey,	Member of Messrs. Gracey Bros., Belfast, and represeuting the North of Ireland Egg Exporters' Association.

Appendix B.

Quantities and Values of Eggs Exported from Ireland. 1904—1923.

Year.	All Ireland.		Northern Ireland.		Belfast Only.	
	Estimated Value.	Quantity Gt. Hnds	Estimated Value	Quantity Gt. Hnds.	Estimated Value.	Quantity Gt. Hnds
	£		£		£	
1904	2,188,104	5,470,260	—	—	598,272	1,495,680
1907	2,920,539	6,675,599	—	—	666,766	1,524,031
1910	2,744,133	6,227,820	—	—	671,830	1,524,743
1913	3,019,167	6,398,335	—	—	752,526	1,594,758
1916	6,328,326	8,254,339	—	—	1,277,450	1,666,236
1918	15,602,754	8,769,689	—	—	3,502,545	1,962,234
1919	15,479,581	9,150,491	—	—	3,832,782	2,265,684
1920	14,307,726	9,181,448	—	—	3,625,640	2,326,619
1921	9,740,908	8,658,585	—	—	2,612,953	2,322,625
1922	—	—	3,359,623	3,349,546	2,256,712	2,249,943
1923	—	—	—	3,279,972	—	2,218,133

Appendix C.

Imports of Eggs into the United Kingdom. 1919—1923.

I. Eggs in Shell.

COUNTRY.	1919.		1920.		1921.		1922.		1923.	
	Great Hundreds.	Value.	Great Hundreds.	Value.	Great Hundreds	Value.	Great Hundreds.	Value.	Great Hundreds	Value.
Denmark	1,638,067	2,776,116	3,939,437	7,032,357	4,735,275	5,455,373	5,734,577	5,644,967	6,757,300	5,486,324
Netherlands	620	1,180	48,474	78,848	505,493	573,804	650,200	571,277	1,435,592	1,075,489
France	6,584	7,065	15,160	24,836	53,546	56,793	319,080	195,492	1,337,724	782,771
Italy	—	—	—	—	—	—	319,034	244,246	415,350	307,258
Egypt	758,728	930,674	556,740	587,450	642,000	508,256	1,259,590	752,867	1,209,332	628,604
Jugo Slavia	—	—	—	—	648,342	599,332	460,474	319,336	419,844	244,998
China	272,585	345,687	731,334	824,600	468,233	462,392	1,057,086	639,026	1,113,024	645,936
U.S.A.	1,408,606	2,205,092	331,185	553,211	321,889	253,278	337,301	289,008	242,441	200,149
Canada	1,476,962	2,230,422	807,281	1,478,933	684,480	788,069	495,729	448,576	377,789	326,369
Other Countries	82,243	116,090	630,897	994,203	2,598,246	2,698,531	3,028,600	2,196,057	6,740,522	4,126,694
TOTAL	5,644,395	8,613,326	7,606,508	11,569,338	10,557,504	11,395,828	13,661,671	11,301,652	20,048,688	13,819,792

had become damp, and thus injurious to the flavour of the eggs. Market authorities for markets where tolls are collected in respect of the sale of eggs are required to provide suitable covered sheds, and although it has not been practicable to make it mandatory on other market authorities who do not possess the right to collect tolls to provide similar accommodation, the Ministry is not without hope that when the full facts as to the importance of the interests involved are realized such authorities will lend their sympathetic co-operation.

Another feature of the Act is the bringing into general use the machinery of the Public Health Acts for the prevention of the sale of eggs unfit for human consumption. Elsewhere in this Report will be found details of the action, behind which the Ministry is the motive force, taken under these Acts, but the drawback to the success of this work was that the option of bringing the various powers into play lay with the local authority, and that for various reasons certain authorities could not see their way to fall in with the majority. No quarrel can be taken with the point of view taken up by these authorities, whose chief objection was that the provisions to be adopted dealt with a wide variety of subjects, but this difficulty has been surmounted by applying in the Marketing of Eggs Act the powers derived from the Public Health Acts so far only as eggs are concerned. This procedure will enable uniform action in the matter to be taken over the whole area.

In the drafting of the Bill, which was ultimately placed on the Statute Book as the Marketing of Eggs Act, 1924, and in the formulation of the rules made in pursuance of that Act the Ministry consulted frequently representatives of the several interests concerned in the Northern Ireland egg industry. By this procedure the Ministry has been greatly facilitated in securing legislation on lines acceptable to the industry as a whole.

Stale and Bad Eggs.—Although the Ministry intended to include in the Bill provisions for bringing Part III. of the Public Health Act Amendment Act, 1890, into force, in every local sanitary area in Northern Ireland, so far as that Act applied to the exposure for sale of eggs unfit for food, efforts were at the same time continued to induce the councils of those areas which had not hitherto adopted the Act to do so on their own initiative, and to make use of the powers so derived at the earliest practicable date. Of a total of 64 local authorities 47 have now brought Part III. of this Act into operation. The services of the Ministry's inspectors continued to be made available for the training of sanitary sub-officers in the testing of eggs for freshness, and during the period under review 13 such officers were trained and received certificates of competency.

It is gratifying to record that, on the whole, local authorities in Northern Ireland have taken up a very firm attitude against persons who sell or expose for sale eggs which have become unsound. The practice is, of course, carried on only while prices

are rising, and has resulted in very serious loss to the trade in general. Since October, 1923, 16 prosecutions have been sucessfully initiated by different local authorities, and there is evidence that they have been followed by a marked improvement in the quality of the eggs sold in the locality.

The maximum results can not, of course, be expected from the administration of this enactment until it is in general operation.

Rules.

In framing the rules under the Act the Ministry has kept before it the desirability of causing the minimum of dislocation compatible with the attainment of the reorganization of the industry within a reasonable period. Following this principle certain of the conditions to be observed are couched in terms which leave some latitude to the Ministry in their interpretation and reserve a certain freedom of action to meet possible developments.

The licence prescribed under the Act will be issued to each wholesale dealer who subscribes to the undertaking to comply with the terms of the rules. To this extent the licence must be regarded as provisional in character, and it will be for the Ministry to withdraw it should the requirements imposed by the rules not be faithfully carried out. The withdrawal of a licence is, however, a very serious step to envisage, as it will render any further wholesale transactions on the part of the individual concerned an offence against the Act, and it will not be taken without full consideration of all the circumstances affecting the case. Moreover, it would constitute an offence for any other person to deal by way of wholesale purchase with any dealer whose licence had been withdrawn. The proposals in regard to licensing will entail close supervision of the work of each trader and a certain elasticity in the Ministry's attitude towards what should be regarded as the due observance of the rules.

Premises.—In the article prescribing conditions applicable to the premises used by wholesale dealers for the purposes of their business the Ministry designedly refrained from stipulating the precise nature and extent of the accommodation requisite for the proper grading, testing and packing of eggs and for the storing of empty cases, packing material and cases of eggs awaiting consignment. Many factors enter into the consideration of this aspect of the problem, and it is manifestly impracticable to deal with it otherwise than by examination in detail. Each particular case will be sympathetically considered on its merits, provided that the trader concerned shows a disposition to meet the requirements of the Ministry as a result of examination of the premises. Alterations found to be necessary will be explicitly detailed, the period within which they should be completed being obviously a matter which depends upon the circumstances of each case.

under this section, and any person who deals by way of wholesale purchase of eggs with any wholesale dealer who is not so licensed, shall be guilty of an offence against this Act :

Provided that a person who deals with a wholesale dealer in eggs who is not licensed as aforesaid shall not be liable to conviction under this sub-section, if he proves to the satisfaction of the court before whom he is charged that he did not know, and could not reasonably have known, that such wholesale dealer was not so licensed.

(3) A licence granted under this section shall remain in force until suspended or revoked by the Ministry by reason of the non-compliance of the holder of the licence with the conditions prescribed as aforesaid, or for any other sufficient reason ; and a fee of twenty shillings shall be paid to the Ministry in respect of the grant of each such licence. A certified copy of a licence may be issued upon payment of a fee of two shillings and sixpence.

(4) If any person forges or fraudulently alters or uses, or permits to be fraudulently altered or used, any licence or certified copy of a licence issued under this section, he shall be guilty of an offence against this Act.

2.—(1) All premises on which, by way of trade, eggs are preserved, cold-stored or pickled shall be registered by the owner or occupier thereof from time to time in such manner as the Ministry may prescribe, and every such owner or occupier carrying on the preserving, cold-storage or pickling of eggs on premises not duly registered shall be guilty of an offence against this Act.

(2) The owner or occupier of premises registered under this section shall keep such records and furnish to the Ministry such returns with respect to the delivery, despatch and ownership of eggs dealt with on the registered premises as the Ministry may prescribe. Any such records shall be open to inspection, at all reasonable times, by a duly authorised officer of the Ministry. If the owner or occupier of any such registered premises wilfully makes default in complying with the requirements of this sub-section, or if he makes any false or fraudulent statement in any record or return kept or furnished in pursuance of this sub-section, he shall be guilty of an offence against this Act.

No individual return or part of a return furnished in pursuance of this sub-section shall be published or disclosed except for the purposes of a prosecution under this Act.

3.—(1) Every person dealing in preserved, cold-stored or pickled eggs, whether by wholesale or retail, whether as importer, consignor, consignee or commission agent, or otherwise, shall conform to the following regulations :—

(*a*) Every package, whether open or closed, which contains any such eggs shall be branded with the words " Preserved Eggs," " Cold-Stored Eggs " or " Pickled Eggs," as the case requires ;

(*b*) The brand shall be on the package itself, and not solely on a label, ticket, or other thing attached thereto;

(*c*) The letters of which the brand is composed shall be capital block letters, not less than two inches square and distinctly legible;

(*d*) If any such eggs are exposed for sale by retail, there shall be attached to, or exhibited with, each lot thereof so exposed, in such manner as to be clearly visible to the purchaser, a label marked, in printed capital block letters not less than one and a half inches square, with the words "Preserved Eggs," "Cold-stored Eggs" or "Pickled Eggs," as the case requires.

(2) Every person dealing in, selling, exposing or offering for sale, or having in his possession for the purpose of sale, any preserved, cold-stored or pickled eggs contrary to the provisions of this section shall be guilty of an offence against this Act:

Provided that a warranty or invoice shall be available as a defence in a prosecution for an offence against this section in relation to the sale of any such eggs as aforesaid, in any case where a warranty or invoice would be so available if the prosecution had been taken under the Sale of Food and Drugs Acts in respect of the sale of an article of food, and section twenty-five of the Sale of Food and Drugs Act, 1875, and section twenty of the Sale of Food and Drugs Act, 1899, shall apply accordingly.

(3) If the Ministry has reason to believe that the provisions of this section are being contravened, the Ministry may specially authorise an officer to enter any premises and take and examine samples from any package and to ascertain, if necessary, by submitting any samples for expert examination, whether an offence against this section has been committed.

4.—(1) The market authority of every market, in which tolls are for the time being authorised to be taken and actually are taken in respect of eggs, shall provide and maintain such covered sheds or other accommodation for the packing of eggs brought for sale at the market as the Ministry considers suitable.

(2) If the market authority fail to comply with any requirement of the Ministry as to the provision of such accommodation, it shall not be lawful for them to demand or recover tolls in respect of eggs brought for sale at the market, for any period during which such failure continues.

(3) In this section the expression "market authority" means the company, corporation or person by whom the tolls in the market are authorised to be taken.

5. Section twenty-eight in Part III. of the Public Health Acts Amendment Act, 1890, which extends and applies sections one hundred and thirty-two to one hundred and thirty-five, inclusive, of the Public Health (Ireland) Act, 1878, (relating to unsound meat) to all articles intended for the food of man, shall, in relation to eggs, be in force, as from the commencement of this Act, in every urban and rural district in Northern Ireland in like manner as if it had been adopted by the council of each such district.

6.—(1) Any officer of the Ministry acting in the execution of this Act shall, without prejudice to any other provisions of this Act, have power—

(*a*) to enter, at all reasonable times, any premises owned or occupied for the purpose of his trade by a licensed wholesale dealer in eggs, and to inspect any process of grading or packing eggs, or any eggs being in the possession of such dealer for the purpose of his trade;

(*b*) to take, for the purpose of expert examination, samples of eggs found in process of being tested, graded or packed, or being in the possession of a licensed wholesale dealer in eggs for any purpose of his trade; and

(*c*) to enter, at all reasonable times, any premises registered for the preserving, cold-storage or pickling of eggs by way of trade.

(2) If the Ministry has reason to believe that wholesale transactions in eggs are carried on upon any premises not owned or occupied by a licensed wholesale dealer in eggs, or that the preserving, cold-storage or pickling of eggs by way of trade is carried on upon any premises not registered for that purpose, the Ministry may specially authorise any of its officers to enter the premises, and in such case the officer shall have the like powers of entry, inspection or taking samples as if the premises were owned or occupied by a licensed wholesale dealer in eggs, or were registered for the preserving, cold-storage or pickling of eggs.

An officer of the Ministry shall not be entitled to exercise any of his powers under this sub-section unless he produces his special authority, if requested to do so by or on behalf of the owner or occupier of the premises to be entered.

(3) Any person who obstructs or impedes a duly authorised officer of the Ministry in the exercise of any of his powers when acting in the execution of this Act shall be guilty of an offence against this Act.

7.—(1) The Ministry may make rules for prescribing the conditions to be complied with by persons licensed under this Act to carry on business as wholesale dealers in eggs, and any other thing

which is required by this Act to be prescribed, and, generally, for carrying this Act into effect.

(2) Rules may be made under this section for enabling any local authorities or their officers to exercise within the respective areas of such local authorities any of the powers which are conferred by this Act upon the Ministry or officers of the Ministry, and adapting the provisions of this Act for that purpose.

8.—(1) All offences against this Act shall be prosecuted, and all fines imposed thereunder shall be recovered, on summary conviction before a court of summary jurisdiction in manner provided by the Summary Jurisdiction (Ireland) Acts.

(2) Any person aggrieved by a conviction or order made by a court of summary jurisdiction on determining any information or complaint under this Act may appeal in the manner provided by the Summary Jurisdiction (Ireland) Acts.

(3) Any person who is found guilty of an offence against this Act shall be liable, on conviction, for the first offence to a fine not exceeding twenty pounds, and for the second offence to a fine not exceeding fifty pounds, and for the third or any subsequent offence to a fine not exceeding one hundred pounds.

(4) Where a person guilty of an offence is liable to a fine exceeding fifty pounds, and the offence, in the opinion of the court, was committed by the personal act, default, or culpable negligence of the person accused, that person shall be liable (if the court is of opinion that a fine will not meet the circumstances of the case) to imprisonment for a period not exceeding three months.

9.—(1) The expenses of the Ministry under this Act, to such an amount as may be approved by the Ministry of Finance for Northern Ireland, shall be defrayed out of moneys provided by Parliament.

(2) All fines recoverable under this Act shall be paid to the Ministry, and the amount so recovered, and all other sums received under this Act by the Ministry, shall be paid to the Exchequer of Northern Ireland, except so far as any sums received in respect of fees may be appropriated by Parliament in aid of expenses under this Act.

10.—(1) This Act may be cited as the Marketing of Eggs Act (Northern Ireland), 1924.

(2) This Act shall come into operation on the first day of January, nineteen hundred and twenty-five.

(3) References in this Act to enactments of the Parliament of the United Kingdom shall be construed as references to those enactments as they apply in Northern Ireland.

STATUTORY RULES AND ORDERS OF NORTHERN IRELAND.

1924, No. 77.

Government of Northern Ireland. Ministry of Agriculture.

Marketing of Eggs Act (Northern Ireland), 1924.

MARKETING OF EGGS (NORTHERN IRELAND) RULES, 1924.

Dated the 18th day of November, 1924.

THE MINISTRY OF AGRICULTURE BY VIRTUE AND IN EXERCISE OF THE POWER FOR THIS PURPOSE VESTED IN IT BY THE MARKETING OF EGGS ACT (NORTHERN IRELAND), 1924, AND OF EVERY OTHER POWER IN THAT BEHALF ENABLING IT, HEREBY MAKES THE FOLLOWING RULES, THAT IS TO SAY :—

I. SHORT TITLE.

1. These Rules may be cited as the Marketing of Eggs (Northern Ireland) Rules, 1924.

II. DEFINITIONS.

2. In these Rules unless the context shall require a different construction :—

(1) The expression " Act " shall mean the Marketing of Eggs Act (Northern Ireland), 1924.

(2) The expression " the Ministry " shall mean the Ministry of Agriculture for Northern Ireland.

(3) The expression " eggs " shall mean eggs in shell of domestic fowl (hens and ducks).

III. APPLICATION FOR LICENCES.

An application for a licence to carry on business in Northern Ireland as a wholesale dealer in eggs shall be made in the form or to the effect stated in the First Schedule to these Rules, and the granting of a licence will be conditional upon the completion by the applicant of the undertaking set out on that form as respects compliance with the conditions of the Rules hereinafter contained.

IV. PREMISES.

Premises used by a wholesale dealer for the purpose of the preparation for sale or consignment of eggs, shall afford to the

satisfaction of the Ministry, sufficient and suitable facilities, having regard to the volume of business transacted thereat, for the proper testing, grading and packing of eggs and the storing of empty cases, packing material and cases of eggs awaiting consignment. The premises shall be adequately lighted and ventilated, and shall be provided with dry floors and kept in a clean, sanitary condition.

V. CASES.

Cases used by wholesale dealers for the carriage of graded eggs by public conveyance in consignments of 300 and upwards shall be of three types, viz. : No. 1 Standard Case, No. 2 Standard Case and No. 3 Standard Case and shall be constructed in accordance with the specification contained in the Second Schedule to these Rules.

No cases of the Standard types shall be used a second time for the carriage of graded eggs by public conveyance.

VI. TESTING.

Subject to the reservation in the fifth paragraph of this Article and to the special arrangement for the disposal of eggs on a quality basis (Article IX.), rejected eggs, being stale, sided, spent, soiled, stained, or dirty eggs, or eggs too small for inclusion in the nominal 14 lb. grade, or eggs with weak, cracked, chipped, dented or broken shells, or eggs unfit for the food of man, shall not be included in packages of eggs for sale or consignment.

Eggs intended for sale or consignment shall not be washed or steeped by or on behalf of a wholesaler dealer.

The provisions of Section 3 (1) of the Act relative to preserved, cold-stored or pickled eggs must be strictly complied with and such eggs shall not be included in any package for sale or consignment along with other eggs not so preserved, cold-stored or pickled.

During the period commencing on the 1st May and ending 31st December, in each year, eggs intended for sale by wholesale (excluding sales between one wholesale dealer and another which come within the special arrangement at Article IX. of these Rules) and eggs delivered for preserving, cold-storage, or pickling, at premises registered under the Act shall be tested singly by means of an approved artificial light test within 48 hours prior to despatch from the premises of the wholesale dealer. An egg shall be rejected on test if :—

1. it is opaque or black ;
2. the white is dull and cloudy, or the yolk cannot be distinguished—this condition usually indicates a broken or spread yolk, and the egg is known as " spent " ;
3. the yolk is anywhere in contact with the shell, under which conditions the egg is known as " sided "—contact is denoted by a spot on the inner side of the shell and also by

the fact that, when the egg is turned quickly, it is observed that the yolk adheres to the shell;

4. it contains blood spots or has dark or mould spots under the shell.

The following characteristics must be present in each egg on test :—

HEN EGGS :

Yolk ... Translucent or faintly visible to visible but not clearly visible and keeping near centre.

White ... Translucent and firm.

Depth of air space not exceeding $\frac{1}{4}$ inch.

DUCK EGGS :

Yolk ... Visible to clearly visible.

Shell ... Clear.

The Ministry may, subject to such conditions as it may prescribe, either generally or in connection with any particular consignment, authorise eggs rejected under this or the next succeeding Article to be sold by a wholesale dealer for manufacturing or such other purpose as the Ministry may determine. The disposal of soiled, stained or dirty eggs, even when the transaction is between one wholesale dealer and another may be effected only under such special authorisation. A special authorisation for the disposal of eggs in this manner will be given by the Ministry only where a written application is made by a wholesale dealer. An application shall contain as full information as practicable as to the class and quantity of the eggs for disposal, the name of the proposed purchaser or consignee, the place of destination and the approximate date or dates of the despatch of the eggs by applicant.

Notwithstanding the provisions of this Article, preserved, cold-stored or pickled eggs may be sold without testing immediately prior to despatch from registered premises (Article XI.), provided, in addition to the markings prescribed in Section 3 of the Act, the eggs are invoiced " W. A. F." (with all faults) and the cases in which they are packed are marked in a legible and indelible manner with the letters " W.A.F." not less than $1\frac{1}{2}$ inches long.

VII. GRADING.

Subject to the special provisions in the Act relating to preserved, cold-stored or pickled eggs, only " Fresh " or " New-Laid " eggs shall be included in any of the grades specified herein.

Hen eggs intended for sale by wholesale, unless to another wholesale dealer in Northern Ireland or intended for preserving cold-storing or pickling, shall be packed according to the following grades :—

Grade 18 lbs. for eggs weighing more than $17\frac{1}{2}$ lbs. per 120.
" 17 " " " " " " $16\frac{1}{2}$ " "
" 16 " " " " " " $15\frac{1}{2}$ " "
" 15 " " " " " " $14\frac{1}{2}$ " "
" 14 " " " " " " $13\frac{1}{2}$ " "

Grading to the weights herein specified is not obligatory in the case of duck eggs.

The eggs in each grade or class shall be clean, free from stain and sound in shell and each egg in a case shall approximate closely to the general average of the eggs in that case. The top layer of eggs in any case shall be fairly representative of the bulk in size, colour and appearance.

Hen eggs and duck eggs shall not be packed in the same case.

Eggs graded to weight, as laid down in this Article, prior to deposit for preserving, cold-storage or pickling need not be so re-graded on subsequent removal from registered premises provided that the original grading remains unaltered.

VIII. PACKING.

The packing of eggs intended for sale by wholesale shall, without exception, be conducted under cover. The packing material used for Standard Cases Nos. 1 and 2 shall consist of clean dry straw or wood-wool of suitable quality, free from objectionable odour. Sufficient packing material shall be used between the layers of eggs packed in these cases and the bottom and top of each case to ensure safety in transit under normal conditions. Empty egg cases, packing material, and cases of packed eggs shall be stored in premises which afford adequate protection from damp and adverse weather and are free from objectionable odours, likely to contaminate the eggs.

Cases in transit must at all times be protected from adverse conditions of weather and if in an open or uncovered vehicle such cases must be protected by effective waterproof covers.

All graded eggs intended for consignment in cases shall be hand packed in such cases.

IX. COLLECTORS OF EGGS.

Collectors of eggs who carry on the business of purchasing eggs for re-sale otherwise than by retail and whose sales are made exclusively to other wholesale dealers in Northern Ireland shall before disposing of the eggs test same as hereinbefore provided; or, as an alternative to such testing, shall sell on a quality basis. In cases of sale on a quality basis the vendor shall be entitled to receive payment only for the New Laid or Fresh eggs delivered in a marketable condition, provided that the purchaser within two clear working days of delivery in the case of duck eggs and three clear working days in the case of hen eggs has dispatched to the seller particulars of the eggs rejected on test or examination.

When itinerant collection is made the eggs shall forthwith be packed in cases of the type known in the trade as "filler" or "section" cases, and the eggs in these cases shall at all times be carefully protected from adverse weather conditions.

X. MARKING OF CASES.

All cases prepared for sale or consignment shall, before despatch from the premises of a wholesale dealer, be marked on each end in a legible and indelible manner with letters and/or numbers, not less than 1½ inches long indicating :—

(*a*) If hen eggs, the grade; if duck eggs, the word "Ducks."
(*b*) Quantity of eggs in the case.
(*c*) Licence Number of wholesale dealer.
(*d*) Consecutive numbering or lettering (or combinations thereof) to correspond with invoice markings.

In addition, the following words shall be marked in like manner on the lid of each case :—"Eggs.—This Side Up. With Care."

In the case of preserved, cold-stored or pickled eggs these markings are additional to those prescribed in the Act.

XI. REGISTRATION OF PREMISES.

An application for the registration of premises where eggs are preserved, cold-stored or pickled shall be made in the form or to the effect stated in the Third Schedule to these Rules.

The owner or occupier of any such registered premises shall keep a record (showing separately particulars as to cold-stored eggs, preserved eggs and pickled eggs) of the quantity and ownership of eggs deposited at the registered premises, the date of each deposit and the quantity and ownership of eggs removed from the premises and the date of each removal, together with the name and address of the consignee in the case of all eggs forwarded by the owner or occupier from such premises. Returns of the deposits and removals during any specified period shall be furnished to the Ministry by the owner or occupier within fourteen days from the receipt of a demand, in writing, from the Ministry.

The owner or occupier shall also give notification to the Ministry of any proposed structural alterations in the premises.

XII. GENERAL.

Every wholesale dealer and every owner or occupier of registered premises shall be bound, at all times, to facilitate an Inspector of the Ministry in the discharge of his duty by affording him every assistance which he may reasonably require for that purpose.

The Ministry may from time to time rescind, amend or vary these Rules or any of them as occasion may require.

In Witness whereof the official seal of the Ministry of Agriculture, Northern Ireland, is hereunto affixed this 18th day of November, nineteen hundred and twenty-four.

L.S.

JAMES S. GORDON,
Secretary.

FIRST SCHEDULE.

GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF AGRICULTURE.

MARKETING OF EGGS ACT (NORTHERN IRELAND), 1924.

FORM OF APPLICATION FOR A LICENCE TO CARRY ON THE BUSINESS OF WHOLESALE DEALER IN EGGS.

(1) $\frac{\text{I}}{\text{We,}}$ ..... Give full Name and Address.

.....

.....

hereby apply for a Licence to carry on the business of wholesale dealer(s) in eggs.

(2) The premises used for the purpose of the wholesale dealings in eggs in connection with which a Licence is now sought are situated at ..... Particulars of all premises used by applicant should be fully set out.

.....

.....

.....

(3) $\frac{\text{I}}{\text{We}}$ enclose herewith the sum of £..... Only one licence fee will be charged each applicant irrespective of the number of premises used.

being the fees prescribed by the above-mentioned Act for one Licence (at £1 0s. 0d.), and ..... certified copies thereof (at 2s. 6d. each).

(4) $\frac{\text{I}}{\text{We}}$ hereby undertake, in the event of a Licence being granted to $\frac{\text{me,}}{\text{us,}}$ to comply with such regulations as the Ministry may from time to time issue, respecting the conduct of wholesale dealings in eggs.

Signature of Applicant .....

Full Postal Address, ...

In the case of Companies or Societies this application and undertaking should be signed by the Secretary or other responsible official.

Witness,..... Date,.....

To THE SECRETARY,
MINISTRY OF AGRICULTURE,
WELLINGTON PLACE,
BELFAST.

SECOND SCHEDULE.

GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF AGRICULTURE.

MARKETING OF EGGS ACT (NORTHERN IRELAND), 1924.

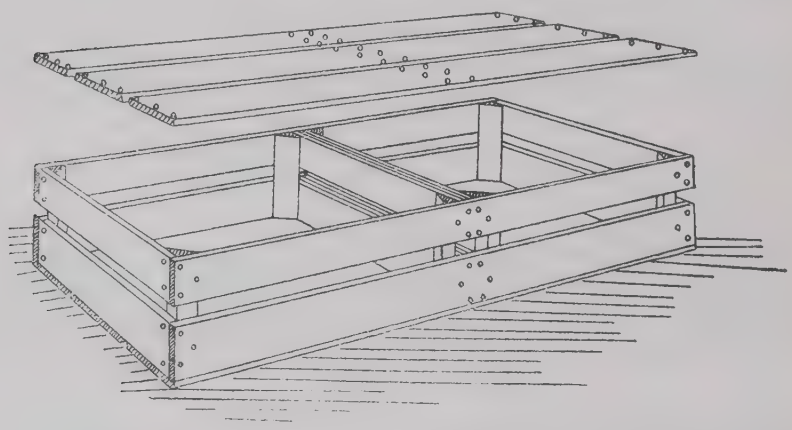
SPECIFICATIONS FOR STANDARD CASES.

The internal measurements and the thickness of timber mentioned in the specifications for these cases represent minimum dimensions.

No. 1 Standard Case (Divisible).

This case is designed for not more than 6 hhd. (720) hen eggs weighing not more than 17½ lbs. per 120.
or 5 hhd. (600) hen eggs weighing more than 17½ lbs. per 120,
or 5 hhd. (600) duck eggs.

The following is a diagram of the case :—



Description.

The case shall be made in two compartments, each compartment to hold 3 hhd. (360) hen eggs weighing not more than 17½ lbs. per 120, packed in three layers, each containing 10 rows of eggs with 12 eggs in each row; or 2½ hhd. (300) hen eggs weighing 17½ lbs. or more per 120; or 2½ hhd. (300) duck eggs, packed in three layers each containing 9 rows of eggs with 11 eggs in each row and 1 odd in each layer.

Construction.

The ends and sides of the case shall consist of two boards spaced horizontally and the case shall have eight corner angle posts.

Internal Dimensions. Each compartment to be not less than			Timber Dimensions to be not less than						
Length.	Width.	Depth.	Top and Bottom boards.		Side boards.		End and centre boards.		Corner Angle posts 2″ square, cut diagonally
			Wide	Thick	Wide	Thick	Wide	Thick	
26″	23″	8″	4″	$\frac{3}{8}$″	3″	$\frac{3}{8}$″	3″	$\frac{5}{8}$″	

Spacing between any two adjoining top, bottom, side and end boards nowhere to exceed 1 inch.

Saw space not exceeding $\frac{1}{4}$ inch must be provided between centre division boards.

Ends and Centre Divisions.

The case shall have two centre divisions, each centre division and each end consisting of two boards; no board shall be less than 23 inches by 3 inches by $\frac{5}{8}$ inch. If end boards of greater thickness than $\frac{5}{8}$ inch are used, care should be taken to ensure that the internal length of each compartment be not less than the required 26 inches.

Sides.

The side boards shall be of the full outside length of the case; no side board shall be less than 3 inches wide nor less than $\frac{3}{8}$ inch thick.

The side boards shall be so fixed that the top edges of the upper boards, and the bottom edges of the lower boards, will be level with the top and bottom edges, respectively, of the end boards.

Tops and Bottoms.

Top and bottom boards shall be not less than 4 inches wide and not less than $\frac{3}{8}$ inch thick.

The outer edges of the outside top boards and bottom boards, when nailed on, shall be flush with the outer sides of the side boards. The top and bottom boards shall be of the full outside length of the case, and be nailed into the end boards.

Corner Angle Posts.

All corner angle posts shall be of the full internal depth of the case, cut diagonally from a post 2 inches square. Square-cut corner posts are not permissible.

Timber.

The wood used for the construction of the cases shall be of suitable strength, well-seasoned, clean, dry and free from bark, wane and feather. All timber thicknesses specified are ACTUAL not nominal.

*Nails and Nailing.

The nails used for making up Case No. 1 shall be of sizes not less than the following :—

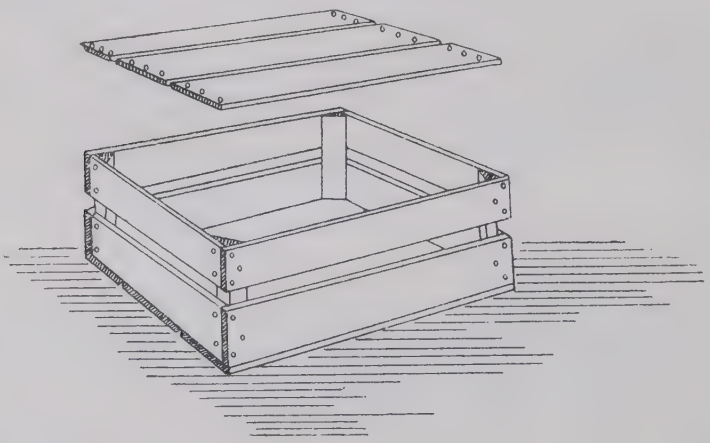
For nailing side to ends. 2 inch nails of 13 gauge.
,, ,, tops and bottoms to ends and centre division boards. $1\frac{3}{4}$,, ,, ,, ,,
For nailing corner posts to ends. $1\frac{1}{2}$ inch nails of 14 gauge.
,, ,, sides to corner posts. ,, ,, ,, ,,

Not less than two nails shall be used in each end of each board, and an additional nail shall be used at each end of a board for every 3 inches or part of 3 inches by which the board exceeds 5 inches in width. This also applies to the nailing of the centre division boards. Each end of each side board shall be secured by at least two nails driven into the end boards and at least one nail driven into the corner post.

In nailing top and bottom boards to centre division boards, care should be exercised to place the nails in rows with at least $\frac{3}{8}$ inch space between the rows so as to allow for the free working of a saw when the case is being divided.

No. 2 Standard Case.

This Case is designed for not more than 3 hhd. (360) hen eggs weighing not more than $17\frac{1}{2}$ lbs. per 120.
or $2\frac{1}{2}$ hhd. (300) hen eggs weighing more than $17\frac{1}{2}$ lbs. per 120.
or $2\frac{1}{2}$ hhd. (300) duck eggs.
The following is a diagram of the case :—



Description.

The case shall be made in one compartment, to hold 3 hhd. (360) hen eggs, weighing not more than $17\frac{1}{2}$ lbs. per 120, packed

*Note.—It is recommended that cement coated wire nails be used and that, so far as possible, nails should be driven askew the grain of the wood.

in three layers, each containing 10 rows of eggs with 12 eggs in each row; or $2\frac{1}{2}$ hhd. (300) hen eggs weighing $17\frac{1}{2}$ lbs. or more per 120, or $2\frac{1}{2}$ hhd. (300) duck eggs packed in 3 layers each containing 9 rows of eggs with 11 eggs in each row and 1 odd in each layer.

CONSTRUCTION.

This case, which is one-half of the No. 1 Standard Case, shall be constructed in like manner to that Case, with ends and sides consisting of two boards spaced horizontally and with four corner angle posts.

All conditions specified for No. 1 Standard Case, with regard to the boards forming the ends, sides, tops and bottoms, as well as to the corner angle posts, spacing and nailing apply to the construction of this case.

INTERNAL DIMENSIONS. Each compartment to be not less than			TIMBER DIMENSIONS to be not less than						
			Top and Bottom boards.		Side boards.		End Boards.		Corner Angle posts 2" square, cut diagonally
Length.	Width.	Depth.	Wide	Thick	Wide	Thick	Wide	Thick	
26"	23"	8"	4"	$\frac{3}{8}$"	3"	$\frac{3}{8}$"	3"	$\frac{5}{8}$"	

Spacing between any two adjoining top, bottom, side and end boards nowhere to exceed 1 inch.

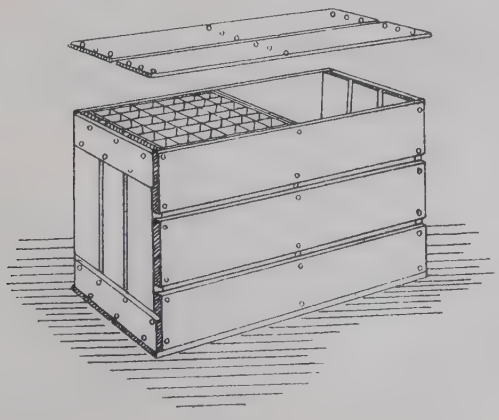
TIMBER.

The wood used for the construction of the cases shall be of suitable strength, well seasoned, clean, dry and free from bark, wane and feather. All timber thicknesses specified are ACTUAL not nominal.

No. 3 STANDARD CASE.

This Case which is designed for 3 hhd. (360) graded hen eggs, not exceeding $16\frac{1}{2}$ lbs. per 120, is fitted with fillers.

The following is a diagram of the case :—



DESCRIPTION.

The case shall be made in two compartments, each compartment to take 180 eggs packed in fillers with flats between the fillers.

INTERNAL DIMENSIONS. Each compartment to be not less than			TIMBER DIMENSIONS. to be not less than						FILLERS. Each division to be	
Length.	Width.	Depth.	Top and Bottom boards.		Side boards.		End and centre boards.		Depth.	Square.
			Wide	Thick	Wide	Thick	Wide	Thick		
$11\frac{5}{8}$″	$11\frac{5}{8}$″	$13\frac{1}{2}$″	3″	$\frac{5}{16}$″	4″	$\frac{7}{16}$″	3″	$\frac{7}{16}$″	$2\frac{1}{2}$″	$1\frac{3}{4}$″

ENDS.

Each end shall be not less than $13\frac{1}{2}$ inches deep by $11\frac{5}{8}$ inches wide by $\frac{7}{16}$ inch thick. If made of two or more boards, the boards should be fixed upright; no end board shall be less than 3 inches wide. The end boards shall be nailed to cross battens measuring not less than $12\frac{1}{4}$ inches by 2 inches by $\frac{7}{16}$ inch thick, two on each end, fixed externally, one across the bottoms of the end boards and the other as close to the tops of the end boards as the construction of the lid permits. The battens shall be flush with the outer sides of the side boards.

CENTRE DIVISION.

Each board shall be not less than $13\frac{1}{2}$ inches deep, $11\frac{5}{8}$ inches wide and $\frac{7}{16}$ inch thick. The division shall be fixed in the centre of the case secured by nails driven through the side and bottom boards.

TOPS AND BOTTOMS.

Each board shall be not less than $\frac{5}{16}$ inch thick and not less than 3 inches in width.

SIDES.

Each board shall be not less than $\frac{5}{16}$ inch thick and not less than 4 inches in width.

*SPACING.

The spacing between any two adjoining boards throughout the case shall nowhere exceed $\frac{3}{4}$ inch. When spacing is provided between any two side boards, it shall be arranged so as to prevent any of the flats working through and the eggs coming in contact.

FILLERS.

The fillers shall be of wood pulp of calibre not less than .030, or other suitable material $2\frac{1}{2}$ inches in depth, each division shall be $1\frac{3}{4}$ inches square; the extreme width of a filler to be $11\frac{1}{2}$ inches. a flat of the same material shall be placed between each pair of fillers. A flat shall be placed underneath the bottom filler and another above the top filler, thus using 10 fillers and 12 flats.

*NOTE. When not intended for cold storing, spacing between boards is not essential.

A layer of fine wood wool shall be placed underneath each lowest filler and above each uppermost filler. These layers shall be such that each will be not less than $\frac{1}{4}$ inch thick when the case is closed down. Parchment paper envelopes (or pads) containing wood wool may be used instead.

TIMBER.

The wood used for the construction of the cases shall be of suitable strength, well-seasoned, clean, dry and free from bark, wane and feather. All timber thicknesses specified are ACTUAL not nominal.

NAILS AND NAILING.

Not less than two nails shall be used in each end of each board, and an additional nail shall be used at each end of a board for every 3 inches or part of 3 inches by which the board exceeds 5 inches in width.

The nails for making up case No. 3 shall be not less than $1\frac{1}{2}$ inches of 14 gauge. It is recommended that cement coated wire nails be used and that, so far as possible, nails be driven askew the grain of the wood.

THIRD SCHEDULE.

GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF AGRICULTURE.

MARKETING OF EGGS ACT (NORTHERN IRELAND), 1924.

FORM OF APPLICATION FOR REGISTRATION OF PREMISES ON WHICH EGGS ARE PRESERVED, COLD-STORED, OR PICKLED.

I
We .....

.....

being the $\frac{\text{owner(s)}}{\text{occupier(s)}}$ of the premises particulars of which are set out below hereby apply for registration of the said premises under Section 2 of the Marketing of Eggs Act.

PREMISES.		Particulars of trade carried on therein, i.e. Preserving, Cold-Storing or Pickling.
No. Street and Town.	Exact location of portions used for trade.	

Signed .....

Address .....

Date .....19.....

To
The Secretary,
Ministry of Agriculture,
Wellington Place,
Belfast.

Circular Letter No. 170.

1st July, 1924.

Circular Letter to Egg Merchants.

Sir,

The Ministry of Agriculture desires to direct the attention of all persons engaged in wholesale dealings in eggs to the terms of the Marketing of Eggs Act (Northern Ireland), 1924, which comes into operation on the 1st January next. The more important provisions, in so far as they affect egg merchants, are explained in the following paragraphs :—

Licensing of Wholesale Dealers.

As from the date mentioned no person may carry on the business of wholesale dealer in eggs unless he has been licensed for that purpose by the Ministry, and the retention of the licence will be conditional on compliance with the regulations to be issued under the Act. The term " wholesale dealer " includes *any person who carries on the business of purchasing eggs for re-sale otherwise than by retail.*

It should be noted especially that it is an offence against the Act for any person knowingly to make wholesale purchases of eggs from any unlicensed wholesale dealer.

While the regulations for the better conduct of the trade will be issued at the earliest date practicable, the Ministry proposes, before this is done, to confer with those representatives of the trade, who were consulted by the Ministry during the progress of the legislation, as to the conditions which should be laid down having regard to the necessity for the proper grading, testing and packing of eggs in Northern Ireland. It is the Ministry's intention, immediately after the regulations have been promulgated, to send forms of application for licences to each known wholesale dealer. In connection with the question of ensuring that adequate information as to the provisions of the Act is brought to the notice of the smaller collectors of eggs it would greatly facilitate the work of the Ministry if each of the larger merchants furnished a list of those collectors from whom he habitually receives consignments of eggs.

Registration of Premises where Eggs are Preserved.

All premises on which, by way of trade, eggs are cold-stored, pickled or preserved, must be registered with the Ministry. In such cases also forms of application for registration will be forwarded in due course for completion and return by interested parties.

The Act requires that owners or occupiers of such premises shall keep records and furnish to the Ministry returns with respect to the delivery, despatch and ownership of eggs dealt with on the registered premises. A further communciation will be issued giving particulars as to the form of these records and returns.

In view of the confidential nature of information which is disclosed by such returns, it has been enacted that no individual return or part of a return furnished in pursuance of the Act shall be disclosed except for the purposes of a prosecution under the Act.

Marking of Packages of Eggs.

The following regulations with regard to the labelling of cold-stored, pickled or preserved eggs shall apply to all persons dealing in eggs :—

(a) Every package, whether open or closed, which contains any such eggs shall be branded with the words " Preserved Eggs," " Cold-stored Eggs," or " Pickled Eggs," as the case requires.

(b) The brand shall be on the package itself, and not solely on a label, ticket or other thing attached thereto.

(c) The letters of which the brand is composed shall be capital block letters, not less than two inches square and distinctly legible.

(d) If any such eggs are exposed for sale by retail, there shall be attached to, or exhibited with, each lot thereof so exposed, in such manner as to be clearly visible to the purchaser a label marked in printed capital block letters not less than one and a half inches square, with the words, " Preserved Eggs," " Cold-stored Eggs," or " Pickled Eggs," as the case requires.

Any person dealing in, selling, exposing or offering for sale, or having in his possession for the purpose of sale, any cold-stored, pickled or preserved eggs not branded or labelled as directed in the foregoing paragraphs shall be guilty of an offence against the Act. The Ministry appreciates, however, that technical offences might unwittingly be committed, and in order that the final responsibility may be brought home to the guilty party, the warranty provisions of the Sale of Food and Drugs Acts 1875 and 1899 have been made available in the case of a prosecution for contravention of these provisions.

Powers of Entry.

The Act provides for powers of entry by authorised officers of the Ministry into premises of wholesale dealers and of premises registered for the purpose of cold storage, preserving or pickling of eggs. The Ministry may also specially authorise an officer to enter premises where there is reason to believe that wholesale dealings are conducted or cold storing, pickling or preserving is being carried on in contravention of the Act.

I am, Sir,

Your obedient Servant,

JAMES S. GORDON,
Secretary.

To the person or organisation named in the address.

September, 1924.

Marketing of Eggs Act (Northern Ireland), 1924.

Sir,

The Ministry of Agriculture desires to direct the attention of the market authorities in Northern Ireland to the terms of the Marketing of Eggs Act (Northern Ireland), 1924, which will come into operation on the 1st January next.

Section 4 of the Act reads as follows :—

4. (1) The market authority of every market, in which tolls are for the time being authorised to be taken and actually are taken in respect of eggs, shall provide and maintain such covered sheds or other accommodation for the packing of eggs brought for sale at the market as the Ministry considers suitable.

(2) If the market authority fail to comply with any requirement of the Ministry as to the provision of such accommodation, it shall not be lawful for them to demand or recover tolls in respect of eggs brought for sale at the market for any period during which such failure continues.

(3) In this section the expression " market authority " means the company, corporation or person by whom the tolls in the market are authorised to be taken.

As no doubt market authorities are aware the agricultural prosperity of the country depends to a considerable extent upon the development of the export trade in eggs. Northern Ireland eggs have, however, to face keen and growing competition in the British market, and this competition can only be met by efficient organisation of the industry at home.

It has been conclusively proved that serious injury has been done to the Northern Ireland egg trade by the exposure to adverse weather of eggs during the process of packing or in cases ready for consignment. Damp packing material imparts a disagreeable flavour to the eggs with the natural result that their selling value is impaired. Initially, much of the responsibility for this state of affairs must be attributed to the fact that eggs purchased in Northern Ireland markets are very often packed in the open regardless of the consequent liability to depreciation in quality. It is proposed to prescribe in the Regulations under the Act that wholesale dealers shall make arrangements for having such packing done in suitable covered premises and the authority for the ..... Market is requested to consider, in the light of the responsibility now placed on them by the above-quoted section of the Act, how far the present accommodation is sufficient to meet the requirements of the merchants attending the market. It is further requested that you will be good enough to furnish the Ministry with particulars as to the following :—

(1) Tolls charged.
(2) Extent of the trade in eggs.
(3) Extent of the accommodation at present provided.
(4) Any other matter which the authority desires to bring to the Ministry's notice in this connection.

I am, Sir,
Your obedient Servant,
J. V. COYLE.

To the Person, Company, or Corporation named in the address.

September, 1924.

Marketing of Eggs.

Sir,

The Ministry of Agriculture desires to bring to the notice of the market authority for the ..... Market, the desirability of all agencies concerned taking immediately such steps as may be found practicable to ensure the development of the egg trade of Northern Ireland.

It will be realised that a sustained demand, particularly in the British market, for Northern Ireland eggs is an essential factor in the success of the Northern Ireland poultry industry, which plays such an important role in the agricultural prosperity of the country. Northern Ireland eggs have, however, to meet keen and growing competition in Great Britain, which can only be countered by improved organisation at home.

It has been conclusively proved that very serious injury has been done to the trade by the exposure to adverse weather of eggs during the process of packing or in cases ready for consignment. Damp packing material imparts a disagreeable flavour to the eggs with the natural result that their selling value is impaired. Initially, at any rate, much of the responsibility for this state of affairs must be attributed to the fact that eggs are very often packed on the market premises in the open regardless of the consequential liability to depreciation in quality. To obviate, as far as possible, the recurrence of complaints arising out of these circumstances the Ministry would be glad if the ..... Market Authority would, in the interest of the egg trade, be so good as to investigate the conditions under which eggs are packed in markets under their control, with a view to providing covered packing accommodation where such does not already exist.

The Ministry will be glad to learn the result of such investigation at an early date.

I am, Sir,
Your obedient Servant,
J. V. COYLE.

To the person, company, or corporation named in the address.

Marketing of Stale or Bad Eggs.

To offer stale or bad eggs for sale in the markets of Northern Ireland, or to include them in consignments exported to Cross-Channel markets, endangers seriously the success of the egg industry in the Six County area. It means the surrender by the Ulster exporters of their pre-eminence in the Cross-Channel markets to their foreign competitors and it opens the door yet wider to foreign competition within our own borders.

The over-holding of eggs, when prices are rising, is the chief cause of the presence of stale and bad eggs in the markets. It should, however, be evident to producers and exporters that any advantage arising from delay in marketing can only be of a temporary character. To look ahead, from the point of view of the trade, is to see that in the long run the game is not worth the candle.

Nothing could inflict more permanent injury on the egg trade of Northern Ireland than the placing of eggs of inferior standard on the British markets. The North of Ireland egg trade would be thereby discredited and British merchants forced to seek supplies from other sources.

The number of foreign competitors, whose marketing methods are up-to-date and who are prepared to supply eggs of first grade quality, is increasing. The result of this increase cannot be ignored : North of Ireland eggs must be marketed in as fresh a condition as possible if North of Ireland produce is to compete successfully in the British markets with eggs from other countries. The importance of the egg trade of Northern Ireland will be apparent when it is realised that the volume of the export trade to Great Britain through North of Ireland ports in this commodity in 1922 represented an annual value of about £4,000,000.

Under Part 3 of the Public Health Acts, Amendment Act, 1890, heavy penalties can be inflicted in the case of persons offering or exposing bad eggs for sale, £20 being fixed as a maximum fine in respect of each such egg. The Statutory Bodies charged with the administration of the Act in Northern Ireland are the Urban and Rural District Councils, and, when a Council has adopted the Act, it is empowered to take proceedings against persons marketing bad eggs in the area under its jurisdiction.

The majority of the Councils have adopted the Act, and of these a number have taken action against offenders with very satisfactory results as regards the condition of eggs brought to subsequent markets in the districts where proceedings were carried through. It is probable that at an early date all the Councils in Northern Ireland will take the steps necessary to enable them to co-operate in the measures which are being taken to stamp out the practice of marketing bad eggs.

The following details of prosecutions for offering or exposing bad eggs for sale afford evidence of the steps which have already been taken by Urban and Rural District Councils to deal with this serious handicap to the success of the North of Ireland egg trade and to assist the Ministry in its efforts to secure an enhanced reputation for North of Ireland eggs.

Dungannon Urban District Council.

On the 7th September, 1922, 33 eggs, portion of a lot of seven dozen eggs, exposed for sale in the Public Market, Dungannon, on being tested by the Local Sub-Sanitary Officer, were found to be unfit for food.

Proceedings were instituted under the Public Health Acts by the Dungannon Urban District Council against the person offering the eggs for sale, and the case was heard at Dungannon Petty Sessions Court on the 25th September.

Defendant was found guilty, and fined a sum of over £3, including costs.

The magistrate, in giving judgment, pointed out that defendant was liable to a fine of £20 per egg, i.e., £660 in all.

On the 14th September, 1922, another prosecution was taken by this Council against a person who exposed 36 bad eggs for sale and the Magistrate in ordering a fine of 40/- and costs intimated that had the eggs not been seized prior to the hearing of the last case he would have inflicted the maximum penalty, viz., £20 per bad egg.

Belfast County Borough. An Inspector of this Sanitary Authority examined part of a consignment of eggs at the Midland Railway Station, Belfast, on the 9th November, 1922, and discovered 18 bad eggs. He obtained an order for their destruction and the consignee was prosecuted at the Belfast Summons Court on the 20th November, and fined £10.

Larne Urban District Council. This Council took proceedings on the 9th January, 1923, against a Grocer in the district for exposing 7 bad eggs for sale in his shop in November, 1922. The defendant was fined £5 and £1 costs.

At Dungannon Petty Sessions on the 22nd January, 1923, a farmer was charged at the instance of the Dungannon Urban District Council with exposing twenty-three unsound eggs for sale in the public market on 23rd November, 1922, and was fined £5 with costs, expenses and solicitor's fees in addition.

Omagh Urban District Council. A farmer and his wife appeared at Omagh Petty Sessions on the 11th June, 1923, charged by this Council with offering eggs which were stale and rotten for sale on the 24th May, 1923. The Court fined each of the defendants £3 and costs, the Magistrates declaring that conduct like this injured the egg trade of the whole country.

Castlederg Rural District Council. This Sanitary Authority instituted proceedings against a person who exposed 4 bad eggs for sale on the 29th June, 1923. The case was heard at Castlederg Petty Sessions on the 7th July, and the offender was fined £3 including costs.

A further prosecution by this Council under the Public Health Acts against a person for exposing 6 unsound eggs for sale in the Castlederg Market on the 31st August, 1923, was heard at the Petty Sessions Court on the 1st September. The defendant was fined £4 including costs.

Larne Urban District Council. Legal proceedings were instituted by this Council against a vendor who exposed for sale 5 bad eggs in the Larne Market on the 15th August, 1923. The offender was fined 22/6 including costs at a Petty Sessions Court on the 11th September.

MINISTRY OF AGRICULTURE,
NORTHERN IRELAND.
October, 1923.

ADDENDUM TO LEAFLET.

Antrim Rural District Council. This Council took proceedings against a vendor who exposed for sale two bad eggs. The case was heard at Antrim Petty Sessions on the 14th November, 1923, and a fine of 2/6 imposed. This being the first prosecution instituted by the Council under the Public Health Acts Amendment Act, 1890, only a nominal penalty was inflicted, but warning was given by the Justices that any future cases of this kind would be dealt with severely.

Bangor Urban District Council. Legal proceedings were instituted by this Council against three vendors who exposed for sale respectively, three, one, and three unsound eggs. The vendors were fined £1 and 13s. costs in each case at the Petty Sessions held on the 14th November, 1923.

Further prosecutions by this Council against two persons who each exposed one unsound egg for sale in Bangor market were heard at the Petty Sessions Court in Bangor on the 20th November, 1923. The defendants were each fined £1 and 14/6 costs.

Belfast County Borough. On the 30th November, 1923, a Sanitary Officer of this Council examined a quantity of eggs exposed for sale by a Belfast shopkeeper and found twelve unsound eggs. Proceedings were instituted, and the offender was fined £5 and costs at the Belfast Summons Court on the 10th December, 1923.

Larne Urban District Council. Legal proceedings were instituted by this Council against two shopkeepers who exposed for sale respectively, 10 and 2 unsound eggs. At a Petty Sessions Court on the 11th December, 1923, the defendants were fined 2/6 in respect of each unsound egg with ordinary costs of Court and special costs to the Council.

Strabane Urban District Council. This Council took proceedings on the 2nd June, 1924, against two traders who exposed unsound eggs for sale. The defendants were fined 5/- and 20/- costs and 1/- and 10/- costs respectively. The Resident Magistrate in giving judgment stated that the fines were small as these were the first prosecutions by the Council in respect of unsound eggs, but that in future the full penalties would be inflicted.

A further prosecution by this Council against an egg dealer who exposed three unsound eggs for sale was heard at Strabane Petty Sessions on the 28th July, 1924, and the defendant fined 5/- and costs.

Another prosecution by the Strabane Urban District Council against an egg dealer who exposed three unsound eggs for sale was heard at Strabane on the 11th August, and a fine of 2/6 in respect of each egg and 15/- costs was imposed.

Castlederg Rural District Council. At Castlederg Petty Sessions on the 5th July, 1924, an egg merchant was fined £1 0s 0d and £2 18s 6d costs for exposing for sale three bad and two stale eggs.

Portadown Urban District Council. Legal proceedings were instituted by this Council against a trader who exposed for sale in Portadown Market on the 14th June, 24 unsound eggs. The defendant was also charged with giving a false name. A penalty of £1 and £1 costs on each summons was imposed and warning was given that in future cases of this kind the maximum penalty would be imposed.

Flax Water.

THIS LEAFLET IS ISSUED JOINTLY BY THE MINISTRY OF AGRICULTURE AND THE IMPERIAL SECRETARY'S DEPARTMENT, NORTHERN IRELAND.

1. A Committee was appointed in the summer of 1923 to advise what could be done in Northern Ireland to reconcile the interests of flax-growers and fishermen in the disposal of flax-water. Its members were :—

Mr. T. H. MAXWELL, K.C. (Chairman),
Mr. R. D. PINKERTON, Ballaghmore, Ballymoney,
Mr. J. W. STEWART, Boghill, Coleraine,
Mr. W. J. M. MENZIES, Assistant Inspector of Salmon Fisheries, Scotland,
Captain J. A. MILLER, Londonderry.

2. This Committee held meetings in all the districts where flax is grown. After hearing much evidence from farmers experienced in flax-growing and fishermen concerned with the protection of the valuable fisheries of Northern Ireland, they came to the conclusion that the interests of flax-growers and fishermen were not irreconcilable, and that the troubles, of which both have complained in past years, have largely been due to a misunderstanding by farmers of the serious damage done by flax-water to fish and a misunderstanding by fishermen of some of the farmers' needs and difficulties. They were accordingly able to make a unanimous report which included certain recommendations for changes in the law on the subject.

3. The Minister for Agriculture and the Imperial Secretary have carefully considered this report and have agreed, that though legislation may in the end be found necessary, an attempt should first be made to secure by voluntary action the objects recommended by the Committee. This leaflet is designed to explain, in general accordance with the Committee's report, what flax-growers should do to prevent the destruction of fish by flax-water and to avoid the risks of prosecution.

4. Salmon and trout spawn in late autumn and early winter; and unless observations have been carefully made, it is difficult for one not acquainted with the habits of the fish to realise the small size of stream into which in times of flood even large salmon will commonly enter at this season. Their stay in such places moreover is short; they ascend as the water rises, spawn, and retreat as it falls again. They may be found in a burn across which a man may step, and trout penetrate into even the smallest field drains, provided the bottom, at least in places, is of a gravelly nature. The eggs hatch out in spring, and the resulting fry exist in many of these small streams for the first year of their life. For a month or more after hatching they lie buried in the gravel in which the eggs were deposited, and later they take refuge under stones and banks, from which they emerge to feed principally at night and in times of flood. Although still present in the streams at the time when flax is retted, they very often pass unnoticed, so that streams, which are really a good spawning ground, are believed locally to contain no fish at all. The Committee made careful experiments by putting yearling and two year old trout into various strengths of flax-water. These experiments, for example, proved that the fish died quickly in flax-water when mixed with river water in the proportion of one of the former to three of the latter. There is no doubt that every year large numbers of fish are destroyed in Northern Ireland by the discharge of fresh and undiluted flax-water into streams and rivers, and that quantities of fish food suffer a like fate. This destruction of fish food must of necessity be very detrimental to the fry hatched in the succeeding spring. Already many rivers, which might afford profitable fishing, are almost devoid of fish life.

5. To prevent this destruction the Committee recommend :—

i. That catch dams should be used whenever possible. They should be made at a sufficient distance from the bank of any river or stream to prevent the flax-water from trickling through, and at a sufficient distance from any dwellinghouse to prevent annoyance from the smell. The flax-water should not be released from the catch dam before January, unless a heavy flood comes earlier. (Flaxgrowers will be notified if further research should justify an alteration of this date.) The " breast " of the dam should then be cut, no underground pipes or chemicals being used.

ii. That, if a catch dam cannot be used, the following alternative methods should be considered :—

(*a*) Discharging the flax-water over land. (Flax-water does not harm agricultural land.)

(*b*) Letting out the flax-water from the retting dam into a stream or river through a small bore pipe slowly enough to secure that it is very thoroughly diluted with pure water as it reaches the stream. Even this method is dangerous, however, if many dams are thus drained into the same small stream, and should not be adopted except with competent advice. (See next paragraph.)

(*c*) Taking the beets out of the dam without discharging any of the flax-water. This would probably involve the use of waders. But the waders would last for years so that the Committee did not think the cost of buying them would be excessive.

6. Copies of this leaflet are being distributed to flax-growers in Northern Ireland, and to the police and water bailiffs. If any flax-grower is in doubt as to the safest means of disposing of his flax water, he should ask the local police to apply for advice for him. Both police and water bailiffs are being instructed not to take proceedings this year, without reference to the local Board of Conservators, and these Boards are being asked to refer any doubtful cases for the joint consideration of the Ministry of Agriculture and the Imperial Secretary's Department. It has been made clear to Boards of Conservators that they should not countenance proceedings in cases where it is shown—

(*a*) That a man has done his best to get and follow competent advice, and to dispose of his flax-water without damage to fish ;

(*b*) That he has discharged his flax-water into waters where he has been officially advised that no harm could be caused to fish or fish food by its discharge.

July, 1924.

Ministry of Agriculture,
25, Wellington Place, Belfast.

Imperial Secretary's Department,
28a, Scottish Provident Buildings, Belfast.

D.I.P. No. 8.

ORDER OF THE MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND.

(Dated 22nd November, 1923.)

BLACK SCAB IN POTATOES (NORTHERN IRELAND) No. 2 ORDER, 1923.

The Ministry of Agriculture, Northern Ireland, by virtue and in exercise of the powers vested in it under the Destructive Insects and Pests Acts, 1877 and 1907 (40 and 41 Vict., ch. 68, and 7 Edw. 7, ch. 4), and of every power in that behalf enabling it, orders, and it is hereby ordered as follows :—

Restriction on Movement of Potatoes out of Scheduled Districts.

1. (1) Excepting potatoes grown in District No. 1, described in the First Schedule to this Order, which are shipped for direct export from Ireland at Annalong, Ardglass, Ballyhalbert, Ballywalter, Dundrum, Greencastle, Kilkeel, Killough, Kircubbin, Newcastle, Newry, Portaferry, Portavogie, Rostrevor, Strangford, or Warrenpoint, potatoes shall not be moved out of the aforesaid districts otherwise than under and subject to the conditions of a licence under this Order authorising such movement.

(2) Potatoes grown in District No. 2, described in the First Schedule to this Order, shall not be moved out of the aforesaid districts otherwise than under and subject to the conditions of a licence under this Order authorising such movement.

(3) The foregoing provisions of this Article in regard to licences shall not apply to potatoes grown outside the districts described in the First Schedule to this Order (hereinafter referred to as the scheduled districts) which pass through any of the aforesaid districts in course of transit by railway but are not loaded or unloaded at any place within the aforesaid districts.

(4) Potatoes shall not be loaded, on any railway truck or railway waggon at any railway station, or other place within any of the scheduled districts, unless the person causing, directing, or permitting the potatoes to be so loaded shall have obtained a licence under this Order authorising such loading.

(5) Potatoes grown outside the scheduled districts shall not be loaded on any ship, boat or other vessel or craft, at any port or other place within any of the scheduled districts, unless the person causing, directing, or permitting the potatoes to be so loaded shall have obtained a licence authorising such loading, provided that this requirement shall not apply to potatoes which are moved in accordance with Article 3 and which remain in the custody of the Railway Company until shipped.

(6) Potatoes grown within any of the scheduled districts shall not be loaded on any ship, boat, or other vessel or craft, at, or be shipped from, any port, or other place within any of the scheduled

districts unless the person causing, directing, or permitting the potatoes to be so loaded, or the person causing, directing, or permitting the potatoes to be so shipped shall have obtained a certificate under this Order stating that the potatoes are of varieties immune to the disease known as Black Scab, Wart or Warty Disease, Cauliflower Disease, Potato Canker, or Potato Rosette (and caused by the fungus known as *Chrysophlyctis endobiotica* (Schilb) or *Synchitrium endobioticum* (Perc)).

Restriction on Planting, Digging, and Moving Potatoes within Prohibited Areas.

2. Within the area described in the Second Schedule to this Order (hereinafter referred to as the prohibited areas) potatoes shall not be planted, dug or otherwise raised out of the ground or moved from any field, plot, pit, shed, outhouse or other place on or used in connection with any farm, garden, cottage plot or agricultural holding otherwise than under and in accordance with the conditions of a licence authorising the planting, digging or raising out of the ground, or movement of the said potatoes

Restriction on Growing and Planting Potatoes within Prohibited Areas or Scheduled Districts.

3. (1) Potatoes other than varieties approved by the Ministry shall not be grown, or supplied or used for planting within the prohibited areas or the scheduled districts.

A list of the varieties approved by the Ministry may be obtained from the Secretary, Ministry of Agriculture for Northern Ireland, Wellington Place, Belfast.

(2) Potatoes grown within the scheduled districts shall not be supplied or used for planting in Ireland elsewhere than in those districts.

Disposal of Potatoes Planted or Growing in Contravention of the Order.

4. If an inspector or any authorised officer finds planted or growing on any land potatoes which are not in the opinion of such officer of an approved variety, or if he has reason to believe that potatoes planted on any land have been so planted in contravention of this Order or in contravention of the conditions inserted in a licence thereunder, he may serve a Notice on the occupier of the land requiring him to dig or otherwise raise out of the ground the said potatoes, and to dispose of the same in such manner and within such period of time as may be prescribed in the Notice by the inspector or authorised officer.

Destruction of " Ground " Potatoes.

5. The occupier of any land within the scheduled districts which is not cropped with potatoes for the time being, but which having been so cropped at a previous period contains potato tubers which were not removed from the ground when the crop was raised, shall prevent the growth of the said tubers by pulling or digging up the potato stalks as they appear above ground.

Disposal of Potatoes Moved in Contravention of the Order

6. If any potatoes are loaded or moved in contravention of this Order, the Ministry or any inspector or other authorised person may destroy, or cause to be destroyed, in such manner as the Ministry or the inspector or the authorised person, as the case may be, thinks fit, the aforesaid potatoes and any packages in which the aforesaid potatoes are or have been contained, or may remove or cause to be removed any of the aforesaid potatoes and packages to such place and in such manner as the Ministry or any inspector or other authorised person may think fit, and may serve a Notice on the consignee of, or on the person in charge of, or on the person in possession of, any of the aforesaid potatoes and packages, directing the aforesaid consignee or person on whom the Notice is served to destroy within such time and in such manner as may be specified in such Notice the aforesaid potatoes and packages, or to remove them within such time and to such place as may be specified in such Notice.

Prohibition of Use as Manure of Certain Substances within Scheduled Districts.

7. Within the scheduled districts it shall not be lawful to supply or to use as manure, or to spread on the land, or to put into or upon any manure heap, either alone or mixed with other material, any cleanings or any sweepings of potato houses or of potato stores or of potato pits.

Production of Licences and Certificates: Names and Addresses

8. (1) Any person in charge or in possession of potatoes which are being loaded, moved, supplied, used, planted, dug or otherwise raised out of the ground where, under this Order, a licence or certificate is necessary shall, on demand of a Justice of the Peace or of a constable or of an inspector or of any authorised officer, or, in the case of potatoes to be moved by railway, of any officer or servant of the railway company, or in the case of potatoes to be shipped, of the master of the ship, boat or other vessel or craft, produce and show him the licence or certificate, and shall allow it to be read and a copy of, or extract from, it to be taken by the person to whom it is produced.

(2) Any person in charge or in possession of potatoes suspected by a Justice of the Peace or by a constable or by an inspector or by any authorised officer of being or having been loaded, moved, supplied, used, planted, dug or otherwise raised out of the ground, in contravention of this Order, shall, on demand as aforesaid, give his name and address and all the information in his possession as to the persons in whose charge or possession the potatoes have been and as to the place where the potatoes were grown or loaded.

Special Licences.

9. Notwithstanding anything in this Order contained, potatoes may be planted, moved, supplied, used or dealt with in any manner specified in any special licence granted under this Order.

Powers of Entry and Inspection.

10. Any justice, constable, inspector, or any authorised officer, upon production, if so required, of his appointment or authority, may, for the purpose of enforcing this Order or of detecting any violation of the provisions thereof, examine the contents of any package or of any conveyance suspected by him to contain potatoes, and may take samples of any potatoes therein, and may for the aforesaid purpose enter any premises or any ship, boat, or other vessel or craft.

Licences and Certificates.

11. (1) Licences and certificates under this Order may be granted by the Ministry or by any inspector or by any authorised officer.

(2) Every licence and certificate issued under this Order shall be delivered up to the Ministry in the manner prescribed on said licence or certificate as soon as the purpose for which it was issued has been carried out or the time for which it is valid has elapsed.

(3) Any erasure or alteration made in a licence or certificate shall render it invalid.

(4) A licence or certificate under this Order obtained by means of any false statement or misrepresentation shall be invalid.

Offences and Penalties.

12. If any person—

(a) moves any potatoes, or causes, directs or permits the same to be moved, in contravention of this Order or in contravention of the conditions inserted in any licence thereunder; or

(b) loads any potatoes on any railway truck or waggon, or on any ship, boat or other vessel or craft, or causes, directs or permits the same to be so loaded, in contravention of this Order or in contravention of the conditions inserted in any licence thereunder; or

(c) plants any potatoes or digs or raises any potatoes out of the ground, or causes, directs or permits the same to be planted, dug or raised in contravention of this Order or in contravention of the conditions inserted in any licence thereunder; or

(d) refuses or neglects to comply with any direction contained in a Notice served on him under the provisions of this Order; or

(e) purchases, takes delivery or permits delivery to be taken of any potatoes grown or moved in contravention of this Order; or

(f) moves, causes, directs or permits to be moved, any potatoes grown in contravention of this Order; or

(g) refuses or neglects to prevent in the manner prescribed in Article 4 or Article 5 of this Order the growth of potatoes in contravention of this Order or in contravention of the conditions inserted in any licence thereunder; or

(h) supplies or uses as manure, or puts into or upon any manure heap, or spreads on any land, any of the substances mentioned in Article 7 of this Order, or causes, directs or permits the same

to be supplied, or used as aforesaid in contravention of this Order, or in contravention of the conditions inserted in any licence thereunder; or

(i) obtains or attempts to obtain a licence or certificate under this Order by means of any false statement or misrepresentation; or

(j) refuses or neglects to produce and show any licence or certificate or refuses to allow it to be read and a copy of, or extract from, it to be taken as required by this Order when called upon to do so by any of the persons set out in Article 8 of this Order; or

(k) refuses or neglects to give his true name and address or gives a false name or address to any of the persons set out in Article 8 of this Order; or

(l) refuses or neglects to give to any of the persons set out in Article 8 of this Order or to the Ministry when required to do so the information required by said Article; or

(m) obstructs or impedes any inspector or any authorised officer in discharge of his duty under this Order; or

(n) refuses or neglects to deliver up any licence or certificate in contravention of Article 11 of this Order; or

(o) is guilty of any other act or default (not hereinbefore specified in this Article) in contravention of the provisions of this Order; or

(p) attempts to do anything by this Order declared to be an offence, he shall be guilty of an offence, and shall be liable on conviction to a penalty of ten pounds for each such offence.

Execution of the Order.

13. For the purposes of this Order a Notice shall be deemed to be served on a person if it is delivered to him personally or left for him at his last-known place of abode, or at his office or place of business, or sent through the post in a letter addressed to him at either of such addresses, and a notice or other document purporting to be signed by an inspector or any authorised officer shall be *prima facie* evidence that it was signed by such inspector or such authorised officer, as the case may be, and duly authorised.

Definitions.

14. In this Order—

" The Ministry " means the Ministry of Agriculture for Northern Ireland.

" Inspector " means an Inspector of the Ministry.

" Authorised Officer " means any person authorised by the Ministry.

" Premises " means land, or a building or buildings, or land with a building or buildings thereon.

" Occupier " means any person using land for the purpose of or in connection with growing potatoes thereon, whether he has an estate in said lands or not.

" Prescribed " means prescribed by the Ministry.

"Approved" means approved for the time being by the Ministry for planting within the scheduled districts and prohibited areas on account of immunity from disease or for any reason appearing to the Ministry sufficient.

References to potatoes as planted or growing shall include the plants at all stages of maturity.

Commencement.

15. This Order shall come into operation on the Twenty-second day of November, Nineteen Hundred and Twenty-three.

Short Title.

16. This Order may be cited as the Black Scab in Potatoes (Northern Ireland) No. 2 Order, 1923.

Revocation of Previous Orders.

17. The Order described in the Third Schedule to this Order is hereby revoked as from the Twenty-second day of November, Nineteen Hundred and Twenty-three provided that such renovation shall not—

(i) affect the previous operation of that Order, or anything duly done or suffered thereunder; or

(ii) affect any right, privilege, obligation, or liability acquired, accrued, or incurred thereunder; or

(iii) affect any penalty incurred in respect of any offence committed against that Order; or

(iv) affect any investigation, legal proceeding, or remedy in respect of any such right, privilege, obligation, liability, or penalty as aforesaid; and any such investigation, legal proceeding, or remedy may be instituted, continued or enforced, and any such penalty may be imposed, as if this Order had not been made.

In witness whereof the Official Seal of the Ministry of Agriculture for Northern Ireland is hereunto affixed, this twenty-second day of November, nineteen hundred and twenty-three.

SEAL.

JAMES S. GORDON,
Secretary

FIRST SCHEDULE.

SCHEDULED DISTRICTS.

DISTRICT No. 1.

A district comprising:—

The Townlands of Aughnamoira, Ballincurry, Ballindoalty, Ballycdmond, Ballyneddon, Ballinran, Ballintur, Ballymoney, Clonallan Glebe, Dromore, Drumsesk, Kilfeaghan, Kilfeaghan Upper, Levallyclanone, Moygannon, Narrow Water, Ringmacilroy, Rostrevor, Rostrevor Upper, Tamnyveagh, The Point Park and the Urban District of Warrenpoint, all in the Barony of Iveagh Upper, Upper Half, in the Administrative County of Down; and the Townlands of Aghyoghill, Attical, Aughnahoory, Aughnaloopy, Aughrim, Ballaghanery, Ballaghanery Upper, Ballinran, Ballinran Upper, Ballyardel, Ballygowan, Ballykeel, Ballymadeerfy, Ballymagart, Ballymageogh, Ballymartin, Ballynahatton, Ballyveagh

Beg, Ballyveagh Beg Upper, Ballyveagh More, Ballyveagh More Upper, Benagh Lower, Benagh Upper, Brackenagh East, Brackenagh East Upper, Brackenagh West, Brackenagh West Upper, Carrigenagh, Carrigenagh Upper, Cocreaghan, Cranfield, Derryoge, Drumcro, Drumindoney, Drummanlane, Drummanmore, Dunnaman (or Donavan), Dunnaval, Glasdrumman, Glenloughan, Glenloughan Upper, Grange, Greencastle, Guineways, Guineways Upper, Kilkeel (including Kilkeel Town), Leitrim, Leitrim Upper, Lisnacree, Lisnacree Upper, Lurganconary, Lurganreagh, Magheramurphy, Magheragh, Maghery, Moneydorragh Beg, Moneydorragh More Upper, Moneydorragh More (including the town of Annalong), Mourne Mountains West, Mourne Mountains Middle, Mourne Park (or Ballyrogan), Moyad, Moyad Upper, Mullartown, Tullyframe, all in the barony of Mourne, in the administrative County of Down; Aghacullion, Ardaghy, Ballaghabeg, Ballyginney, Ballyhafry, Ballyloughlin, Ballymagreehan, Ballymoney, Burrenbane, Burrenreagh, Carnacavill, Castlewellan (including the Town of Castlewellan), Clarkhill, Clonachullion, Cross, Drumee, Drumena, Dundrinne, Fofannybane, Fofannyreagh, Letalian, Moneyscalp, Moyad, Murlough Upper, Slievenalargy, Tollymore, Tollymore Park, Tullybranigan, Tullyree, and the Urban District of Newcastle, all in the barony of Iveagh Upper, Lower Half, in the Administrative County of Down; and the townlands of Aghlisnafin, Ardmeen, Audley's Acre, Ballybannan, Ballycam, Ballydargan, Ballydonety, Ballydonnell, Ballydugan, Ballygallum, Ballygilbert, Ballykeel, Ballykilbeg, Ballykinler Lower, Ballykinler Middle, Ballykinler Upper, Ballylig, Ballylough, Ballylucas, Ballymote Middle, Ballymote Lower, Ballymote Upper, Ballynagallagh, Ballynewport, Ballynoe, Ballyplunt, Ballyrolly, Ballystrew, Ballyvange, Ballyvastton, Ballyviggis, Ballywarren, Bonecastle, Bright, Cargah, Carrickanab, Carrowbane, Carrowdressex, Castlescreen, Clanmaghey, Commons of Clanmaghery, Clogher, Commonreagh, Coniamstown, Corbally, Crolly's Quarter, Demesne of Down, Dundrum, Erenagh, Glebe, Glovet, Grangewalls, Grangicam, Hollymount, Islandbane, Jordan's Acre, Kilbride, Killavees, Killough (including the town of Killough), Legamaddy, Lisnamaul, Lisoid, Magheralagan, Magherasaul, Marshallstown, Moneycarragh, Moneylane, Murlough Lower, Quarter Cormick, Rathmullan Lower, Rathmullan Upper, Ringreagh, Rossglass, Russell's Quarter, Saint John's Point, Saul Quarter, Strand, Struell, Tobercorran, Tobermoney, Tullinespick, Tullymurry, Tyrella North, Tyrella South, Wateresk, Whigamstown, Woodgrange, and the Urban District of Downpatrick, all in the barony of Lecale Upper, in the Administrative County of Down, and the townlands of Annadorn, Ardilea, Ardtanagh, Castlenavan, Claragh, Cloghram, Clough, Creeghduff, Cumran, Dumanaghan (or Drumulcaw), Drumanakelly, Drumcaw, Drumgooland, Dunnanew, Farranfad, Knocksticken, Naghan, Seaforde Demesne, Tannaghmore, all in the barony of Kinearlty, in the Administrative County of Down; and the townlands of Acre M'Cricket, Ardglass (including the town of Ardglass), Ardtole, Audleystown, Ballinarry, Ballintlieve, Ballintogher, Ballyalton, Ballybeg, Ballybranagh Lower, Ballybraunagh Upper, Ballyclander Lower, Ballyclander Upper, Ballycruttle, Ballyculter Lower, Ballyculter Upper, Ballyedock Lower, Ballyedock Upper, Ballyhoran, Ballyhosset, Ballyhosset Miltown, Ballylenagh, Ballymenagh, Ballymurry, Ballynagarrick, Ballynagross Lower, Ballynagross Upper, Ballyorgan, Ballyrenan, Ballysallagh, Ballystrokes, Ballysugagh, Ballytrustan, Ballywalter, Ballywoodan, Bishopscourt, Cargagh, Carrintaggart, Carrow-Ballywalter, Ballywoodan, Bishopscourt Cargagh, Carrintaggart, Carrowbaghran, Carrowcarlin, Carrownacaw, Carrowvanny, Castle Island, Castlemahon, Castleward, Church Ballee, Cloghy, Coney Island, Corbally, Dillin, Dunsfort, Ferryquarter, Glebe, Isle M'Cricket, Jordan's rew, Kilclief, Kildare's Crew, Killard Upper, Killard Lower, Lagnagoppoge, Lisbane, Lisboy, Lismore, Loughkeelan, Loughmoney Portloughan, Quoile, Raholp, Ringawaddy, Ringbane, Ringfad, Ross, Russell's Quarter South, Russell's Quarter North, Saul, Sheepland Beg, Sheepland More, Slievenagriddle, Spittle Ballee, Spittle Quarter, Strangford Lower, Strangford Upper, Tollumgrange Lower, Tollumgrange Upper Tullycarnan, Tullyfoyle Lower, Tullyfoyle Upper, Tullynaskeagh, Tullyratty, Walshestown, Whitehills, all in the barony of Lecale Lower, in the Administrative County of Down; and the townlands of Ardgeehan, Ardkeen, Ardminnan, Ardquin, Balligan, Ballyadam, Ballyblack, Ballybrannigan, Ballycam, Ballycran Beg, Ballycran More, Ballyedock or Carstown, Ballyesborough, Ballyfinragh, Ballyfounder, Ballyfrench, Ballygalget, Ballygarvan, Ballygarvigan, Ballygelagh, Ballygraffan, Ballyhalbert, Ballyhemlin, Ballyhenry, Ballyherly, Ballylimp, Ballymacnamee, Ballymarter, Ballyminish, Ballymurphy, Ballynichol, Ballyobegan, Ballyphilip, Ballyquintin, Ballyridley, Ballyrusley, Ballyspurge, Ballytrustan, Ballywadden, Ballywallon, Ballywalter, Ballyward, Ballywhite, Ballywhollart, Ballyweird, Broom Quarter, Castleboy, Cloghy, Cookstown, Corrog, Craigaroddan, Demesne, Derry, Dooey, Drumardan, Drumardan Quarter, Dun-

evly, Echlinville, Fish Quarter, Glastry, Granagh, Gransha, Inishargy, Kearney, Keentagh, Killydressy, Kircubbin, Kirkistown, Knockinelder, Lisbane, Loughdoo, Marlfield, Newcastle, Nuns-quarter, Parson Hall, Portavogie, Priest-town, Ratallagh, Roddans, Rowreagh, Slanes, Springvale, Tara, Thomastown, Tieveshilly, Tullyboard, Tullycarnan, Tullycross, Tullynacrew, Tullymally, Tullytramon, and that portion of the townland of Ballyatwood, which lies south of the main road from Greyabbey to Ballywalter, all in the barony of Ards Upper, in the Administrative County of Down; and the townlands of Ballybryan, Bootown, Killyvolgan, Rosemount, and those parts of the townlands of Ballyboghilbo, and of Black Abbey which lie south of the main road from Greyabbey to Ballywalter, all in the barony of Ards Lower in the Administrative County of Down; the townlands of Ballynacraig, Commons and Greenan and the Urban District of Newry, in the lordship of Newry in the Administrative County of Down; the townlands of Ballinlare, Carnagat, Cloghoge Derry Beg, Drumalane, Fathom Upper and Fathom Lower, Lisdrumgullion, Lisdrumliska, in the barony of Orior Upper, in the Administrative County of Armagh.

DISTRICT No. 2.—An area comprising the townlands of Ballycarn, Ballygowan, Ballylessan, Ballymullan, Ballynahatty, Ballyskeagh, Drumbeg, Drumbo (that portion north of the road from Shaw's Bridge to Lisburn), Edenderry, Largymore, Lisnatrunk (Parish of Blaris), Lisnatrunk (Parish of Lambeg), and Tullynacross, in the barony of Castlereagh Upper, in the Administrative County of Down; the townlands of Lambeg South, Lisnagarvey, Old Warren, and Tonagh, in the barony of Massereene Upper, in the Administrative County of Antrim, and the Urban District of Lisburn, in the baronies of Massereene Upper and Castlereagh Upper in the Administrative County of Antrim, the townlands of Ballyfinaghy, Derryaghy, Dunmurry, Killeaton, Kilmakee, Lambeg North, Malone Upper and Old Forge, in the barony of Belfast Upper in the Administrative County of Antrim.

SECOND SCHEDULE.

Prohibited Areas.

Any farm, garden, cottage plot or agricultural holding on any portion of which the disease of potatoes known as Black Scab, Wart or Warty Disease, Cauliflower Disease, Potato Canker or Potato Rosette (and caused by the fungus known as *Chrysophlyctis endobiotica* (Schilb) or *Synchitrium endobioticum*) (Perc) exists or has at any time existed.

THIRD SCHEDULE.

Order Revoked.

The Black Scab in Potatoes (Northern Ireland) No. 3 Order, 1922.

1st January, 1924.

Inspection of Potato Crops.

Sir,

I have to refer to the Ministry's circular of the 1st January, 1923, in which reference was made to the efforts of the Ministry to check in Northern Ireland the spread of the disease known as Black Scab in potatoes; and in which reference was also made to the Ministry's arrangements for the inspection of growing crops of immune varieties of potatoes, the general planting of which was strongly recommended.

The Ministry desires again to emphasise the fact that an extension of the area under immune varieties constitutes the most effective check to the spread of the disease. It is recognised, however, that there is in British and Irish Free State markets a

demand for particular varieties which are non-immune, and that accordingly the present more popular susceptible varieties cannot at once be entirely replaced by immunes and that there must be a transition period during which the change will gradually be made In the light of this belief the Ministry proposes during the coming season to inaugurate a scheme for the inspection of growing crops of certain non-immune varieties, including " Up-to-date," " Arran Chief," " British Queen," " King Edward VII." and the principal early varieties such as " Epicure," " May Queen," and " Duke of York " ; in addition to again carrying out inspections of growing crops of immune varieties.

Certificates as to purity will be issued in respect of all satisfactory crops.

The Ministry desires to point out that a feature of the modern seed potato trade and particularly the cross-channel trade, is the requirement that, as far as possible, seed should be the produce of crops officially certified as pure and true to type. Under the Wart Disease of Potatoes Order of 1923, made by the Ministry of Agriculture and Fisheries for England and Wales, only stocks of immune varieties of certified purity are permitted to be planted on infected land in those countries and a minimum purity standard of 99½% is deemed to be necessary in order that the requisite purity certificate may be issued. Furthermore, as regards seed potatoes for general planting in England and Wales, the Seeds Act, 1920, requires that the person offering such seed for sale must either disclose the name of the variety, and thereby imply that the standard of purity is not less than 97%, or he must disclose the fact that the seed is of mixed varieties.

It may be pointed out that potato growers in England and Wales fully realise that seed potatoes from Northern Ireland are quite suitable for their requirements so far as vigour of growth is concerned ; but development of the trade is handicapped by the fact that only a relatively small portion of the seed exported from this country can be certified as pure.

The Ministry, therefore, appeals to growers to plant wherever practicable, only pure seed and to have the resulting crops inspected with a view to the procuring of certificates as to purity. The Ministry feels that if this advice is generally followed the seed potato export trade of Northern Ireland will, within a very few years, become an asset of the greatest importance to the agricultural community.

Persons who desire to have crops inspected should make application to the Ministry any time during May and June, 1924.

I am, Sir,

Your Obedient Servant,

JAMES S. GORDON,

Secretary.

To the Person or Organisation named in the Address.

Restrictions on the Cutting Down of Trees.

It has come to the notice of the Ministry that certain proprietors of holdings in respect of which Advances have been made under the Irish Land Acts since 3rd December, 1909, have cut down trees growing on their holdings without previously having obtained the written permission of the Ministry.

The attention of such occupiers is accordingly drawn to the appended copy of Sections 32 (1) (*b*) and 32 (2) of the Irish Land Act, 1909. It should be pointed out that the powers formerly exercised by the Department of Agriculture and Technical Instruction for Ireland, under the Sections referred to, are now vested, so far as Northern Ireland is concerned, in the Ministry of Agriculture.

Section 32 (1) (*b*) of the Irish Land Act, 1909 :—

"The proprietor shall not, without the consent in writing in the prescribed form of the Department of Agriculture and Technical Instruction for Ireland, cut down or uproot, or permit to be cut down or uprooted, any tree (other than a fruit tree or osier) upon the holding which is necessary for the ornament or shelter of the holding, and, if any such tree is cut down or uprooted in violation of this condition, the proprietor shall be guilty of an offence under this Act and shall be liable on summary conviction to a penalty not exceeding five pounds for each tree so cut down or uprooted, unless he satisfies the Court that he received the prescribed consent."

Section 32 (2) of the Irish Land Act, 1909 :—

"Where, after the passing of this Act (viz., 3rd December, 1909), a tenant enters into an agreement for the purchase of his holding under the said Acts, the foregoing condition with respect to the cutting and uprooting of trees shall, as from the date of the agreement, apply to the holding in like manner as if the advance had been made, unless and until the application for an advance is refused or withdrawn."

For the information of occupiers of holdings in respect of which advances were made *prior* to the passing of the Irish Land Act of 1909, it is pointed out that where it is brought to the notice of the Ministry of Finance for Northern Ireland that the security for the repayment of the Advances is being seriously diminished by the cutting down of trees on such holdings, action may be taken by that Ministry as successors in Northern Ireland to the Irish Land Commission by way of injunction to restrain such cutting.

It is therefore suggested that in both cases, where there is any reasonable doubt regarding the propriety or legality of unauthorised cutting-down of trees, the Ministry of Agriculture should be approached.

Forms of application for permission to cut down or uproot trees on holdings affected by the above-mentioned Acts may be had on application to the Secretary, Ministry of Agriculture, Wellington Place, Belfast.

MINISTRY OF AGRICULTURE,
NORTHERN IRELAND. February, 1924.

Table showing the Acreage under Crops, and numbers of Live Stock in Northern Ireland on 1st June, 1924, with comparative figures for the year 1923.

In 1924 the Agricultural Statistics were again collected through the Royal Ulster Constabulary and were also estimated from returns received direct from farmers. Examination of the results obtained under the two systems for the years 1923 and 1924 shows that the figures in respect of the years 1919 to 1922, which were based on returns received direct from farmers, will require to be revised in the light of the information now available regarding the divergencies in the figures produced under the two systems.

The figures published below are the results of the complete enumeration carried out by members of the Royal Ulster Constabulary, and the particulars for 1923, are, therefore, somewhat different from those already published for that year.

I. Acreage under Crops in Northern Ireland.

	1924.	1923.	Increase (+) or Decrease (−) between 1923 and 1924.	
Corn Crops:—	Acres.	Acres.	Acres.	Per cent.
Wheat	5,023	6,997	− 1,974	− 28.2
Oats	332,903	351,546	− 18.643	− 5.3
Barley	2,391	2,149	+ 242	+ 11.3
Rye	687	661	+ 26	+ 3.9
Beans and Peas	688	784	− 96	− 12.2
Total extent under Corn Crops	341,692	362,137	− 20,445	− 5.6
Green Crops:—				
Potatoes	157,220	162,559	− 5,339	− 3.3
Turnips	50,581	49,241	+ 1,340	+ 2.7
Mangels	1,684	1,873	− 189	− 10.1
Cabbage	2,158	3,577	− 1,419	− 39.7
Other Green Crops	3,627	4,306	− 679	− 15.8
Total extent under Green Crops	215,270	221,556	− 6,286	− 2 8
Flax.	42,838	42,712	+ 126	+ 6.5
Fruit	10,450	9,808	+ 642	+ 0.3
Total extent under Corn and Green Crops, Flax and Fruit	610,250	636,213	− 25,963	− 4.1
Hay	472,297	460,847	+ 11,450	+ 2.5
Total extent under Crops	1,082,547	1,097,060	− 14,513	− 1.3

II. Table showing the Numbers of Live Stock in Northern Ireland in each of the years 1923 and 1924.

	1924.	1923.	Increase (+) or Decrease (−) between 1923 and 1924.	
	No.	No.	No.	Per cent.
Cattle—				
Milch Cows	256,739	263,163	− 6,424	− 2.4
Heifers in calf	14,171	16,683	− 2,512	− 15.1
Other Cattle—				
Two years old and upwards	99,206	92,953	+ 6,253	+ 6.7
One year old and under two years	169,429	171,887	− 2,458	− 1.4
Under one year	196,077	202,932	− 6,855	− 3.4
Total number of Cattle	735,622	747,618	− 11,996	− 1.6
Sheep—				
Ewes, for breeding purposes	225,789	205,715	+ 20,074	+ 9.8
Other Sheep—				
One year old and upwards	47,763	47,714	+ 49	+ 0.1
Under one year	235,853	210,542	+ 25,311	+ 12.0
Total number of Sheep	509,405	463,971	+ 45,434	+ 9.8
Pigs—				
Sows for breeding	14,517	20,771	− 6,254	− 30.1
Other Pigs—				
Six months old and upwards	17,165	23,767	− 6,602	− 27.8
Under six months	108,096	151,251	− 43,155	− 28.5
Total number of pigs	139,778	195,789	− 56,011	− 28.6
Goats and Kids	54,952	57,880	− 2,928	− 5.1
Horses—				
Used in agriculture	96,480	100,116	− 3,636	− 3.6
Unbroken Horses—				
One year old and upwards	5,197	7,284	− 2,087	− 28.7
Under one year	1,577	2,079	− 502	− 24.1
Mules and Jennets	368	385	− 17	− 4.4
Asses	9,280	9,971	− 691	− 6.9

Table showing the Acreage under the different varieties of Potatoes grown in Northern Ireland in 1924.

County.	Up-to-dates.	Arran Victory.	Arran Chief.	Black Skerries	Irish Queens.	British Queens.	Lochar.	Champ-ions.	Rhod-erick Dhu.	Suttons.	Irish Whites.	Other Var-ieties.	Total of County
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Antrim ...	13,857	7,166	2,929	1,850	624	2,321	361	1,571	176	231	282	489	31,857
Armagh ...	3,134	2,385	2,131	1,992	2,875	2,228	294	1,233	232	42	—	434	16,980
Down ..	3,511	6,386	4,014	2,276	2,182	4,943	8,834	523	1,800	18	—	1,681	36,168
Fermanagh ...	1,293	504	1,653	86	3,697	1,214	52	1,545	40	1	7	291	10,383
Londonderry ...	8,082	3,538	3,723	6,946	1,922	1,701	101	1,376	104	409	52	249	28,203
Tyrone ...	5,181	4,261	6,125	4,797	4,943	3,748	281	2,441	195	411	670	576	33,629
Total for Northern Ireland ...	35,058	24,240	20,575	17,947	16,243	16,155	9,923	8,689	2,547	1,112	1,011	3,720	157,220

Table showing Expenditure on Special Development Schemes by County Committees of Agriculture during the period ended 31st March, 1925.

County.	Itinerant Instruction in Agriculture	Agricultural Overseers.	Improvement of Pastures.	*Improvement of Mountain Sheep.	Totals.
	£ s. d.	£ s d.	£ s d.	£ s d.	£ s. d.
Antrim	246 16 10	246 2 2	85 10 4	96 0 3	674 9 7
Armagh	—	236 5 6	39 7 6	—	275 13 0
Down	—	587 6 1	39 14 7	53 2 8	680 3 4
Fermanagh	—	416 3 9	75 19 2	—	492 2 11
Londonderry	—	580 3 1	58 13 10	—	638 16 11
Tyrone	333 14 11	572 17 2	115 13 0	47 11 5	1,069 16 6
Total	580 11 9	2,638 17 9	414 18 5	196 14 4	3,831 2 3

*Net expenditure after deducting receipts from sale of rams.

"Baby" Beef Experiment 1924-25.

The experiment was continued on lines very similar to those of last year's test, with the following alterations and additions:—

1. Only two lots of calves instead of three.
2. Calves to be locally bred in all cases.
3. Preliminary period of feeding prior to start of experiment proper during which the selected calves are to be fed fodder, roots and bruised or crushed oats.
4. Experiment proper to start not later than 15th October, 1924.

Experiment.

Lot 1.—Calves fed for sale as stores at from twelve to fifteen months' old.
Lot 2.—Calves fed for sale as beef at from twelve to fifteen months' old.

Conditions.

Each lot should consist of three calves, but where six suitable calves cannot be secured the experiment may proceed with two calves in each lot.

All calves to be as nearly as possible of the same weight and of the same age. The breeding of the calves should be known. They should be locally bred and well reared calves preferably all by the same sire and born during the months of February, March or April provided the ages of the calves for any experiment do not differ by more than six weeks. It is desirable that all the calves in the experiment should be bullocks, but if this is not possible the sexes must be evenly balanced.

Feeding.

All the calves are to be fed similarly until the start of the experiment, which should in all cases be not later than the 15th October, 1924.

Calves selected for the experiment should be separated from the remainder of the calves on the farm about three weeks prior to the commencement of the experiment and all fed alike during that period on the ration to be fed to the store lot after the experiment begins. The calves must be weighed prior to the start of the experiment and divided into two lots as evenly balanced as possible.

It is desirable to have the weights of the calves at the beginning of the preliminary period also and weighing at that time should be done where possible.

Table showing the extent and produce of the Potato Crop in Northern Ireland in each of the year 1923 and 1924.

The estimated average yield of the Potato Crop in Northern Ireland in 1924 was 5.3 tons per statute acre as against 5.6 tons per statute acre in 1923 and 5.8 tons per statute acre in the ten years 1914-1923.

The following table shows the estimated extent, total produce and average yield per statute acre of the crop in Northern Ireland in 1924 with comparative figures for the year 1923 and the decennial period 1914-1923.

The estimated produce and yield per acre shown in the table represents in all cases the yield of *sound* tubers only.

Year	Potatoes.		
	Total Acreage.	Total Produce.	Average Yield per Statute Acre.
	Acres.	Tons.	Tons.
1924	157,220	828,833	5.3
1923	162,559	916,539	5.6
Average for the ten years' period 1914-1923	170,866	996,628	5.8

Table showing the extent and produce of the Turnip and Mangel Crops in Northern Ireland in each of the years 1923 and 1924.

The estimated average yield of the Turnip Crop in Northern Ireland in 1924 was 9.4 tons, per statute acre, as against 17.4 tons in 1923, and 16.3 tons in the decennial period 1914-1923. The estimated average yield of the Mangel Crop in 1924 was 8.4 tons as against 16.2 tons in 1923 and 17.3 tons in the decennial period 1914-23.

The following table shows the estimated extent, total produce and average yield per statute acre of the Turnip and Mangel Crops in 1924 with comparative figures for 1923, and the ten years' period 1914-1923.

Year.	Turnips.			Mangels.		
	Extent.	Produce.	Estimated yield per Statute acre.	Extent.	Produce.	Estimated yield per Statute acre.
	acres.		tons.	acres.	tons.	tons.
1924	50,581	tons.	9.4	1,684	14,084	8.4
1923	49,241	474,617	17.4	1,873	30,396	16.2
Average for the ten years' period 1914 to 1923.	53,692	854,629 877,323	16.3	2,167	37,863	17.3

Table showing the extent and produce of the Flax crop in Northern Ireland in each of the years 1923 and 1924.

The estimated average yield of the Flax Crop in Northern Ireland in 1924 was 21.7 stones (of 14 lbs.) per statute acre as against 27.3 stones in 1923 and 23.8 stones in the decennial period 1914-1923.

The following table shows the estimated extent, total produce and average yield per statute acre of the Flax Crop in 1924 with comparative figures for the year 1923 and the decennial period 1914-1923.

FLAX.

Year.	Extent.	Produce.	Average Yield. per Statute Acre.
	Acres.	Tons.	Stones (of 14 lbs.)
1924	42,838	5,819	21.7
1923	42,712	7,301	27.3
Average of the ten years' period 1914 to 1923	62,594	8,944	23 8

Table showing the Average Prices of Live Stock in Northern Ireland in each of the years ended 30th September, 1922, 1923, and 1924.

Description.	1922.	1923.	1924.
CATTLE PER HEAD:—			
	£ s. d.	£ s. d.	£ s. d.
Calves under 6 months	1 14 6	2 3 0	1 19 0
STORE CATTLE:—			
6—12 months	7 19 6	8 9 6	8 15 0
1—2 years	12 13 6	12 13 9	12 11 0
2—3 years	17 10 6	16 3 0	16 3 9
FAT CATTLE:—			
2—3 years	23 15 6	21 5 6	21 8 1
3 years and over	25 13 0	24 19 0	22 18 8
COWS AND BULLS	19 12 6	19 13 6	18 8 6
SPRINGERS	22 2 6	22 8 6	22 8 9
MILCH COWS (down calved)	20 15 6	20 15 0	20 14 6
*SHEEP PER HEAD:—			
Lambs	2 14 3	2 16 6	2 15 9
STORE SHEEP:—			
1—2 years	3 10 3	3 18 0	3 13 6
2 years and over	3 12 3	4 3 0	3 14 6
FAT SHEEP:—			
1—2 years	3 14 9	3 19 0	3 19 6
2 years and over	4 1 0	4 1 0	4 1 9
PIGS PER HEAD:—			
Young pigs 8—10 weeks	3 15 9	2 15 6	1 7 6
STORE PIGS:—			
10 weeks—4 months	5 17 3	5 14 9	3 9 0
SOWS for breeding	15 11 0	11 15 0	6 14 0

*Long woolled varieties.

Table showing the average prices of certain Agricultural Products in Northern Ireland in each of the years ended 30th September, 1922, 1923, and 1924.

Description.	Unit.	Average Price.		
		1922	1923	1924
		s d	s d	s d
White Oats ...	Per cwt.	9 2	8 10	9 0
Potatoes ...	,, ,,	4 4	3 2	6 11
1st and 2nd years Hay ...	,, ton.	128 4	86 3	107 7
Meadow Hay ...	,, ,,	89 3	68 7	87 6
Flax ...	,, stone.	15 2	15 10	14 6
Pork .	,, cwt.	122 2	92 10	81 5
Eggs ...	,, 120	17 6	15 0	15 10
Poultry:—				
Hens ...	,, pair.	8 8	6 4	5 10
Chickens .	,, ,,	10 0	7 6	7 0
Ducks . .	,, ,,	10 2	6 8	5 10

Table showing the average Retail Prices per cwt. of Fertilizers in Northern Ireland in the years 1922, 1923, and 1924.

Description	Average Price.		
	1922.	1923.	1924.
	s. d.	s. d.	s. d.
Nitrate of Soda	17 9	16 10	15 10
Sulphate of Ammonia	19 3	18 3	16 11
Superphosphate:—			
35% Soluble Phosphate	5 6	4 6	4 2
30% ,, ,,	4 10	4 2	3 9
26% ,, ,,	4 7	4 1	—
Bone Meal	10 5	11 0	11 11
Steamed Bone Flour	11 9	—	12 2
Pure Dissolved Bones	10 9	12 6	12 0
Basic Slag:—			
40—42% Total Phosphate	—	4 10	4 2
30—32% ,, ,,	5 10	4 0	3 6
20—22% ,, ,,	3 10	—	3 1
Potash Manures:—			
Kainit	3 8	3 5	2 11
Sylvinit	3 11	3 4	2 10
Potash Salts	7 0	—	—
Sulphate of Potash	14 11	11 11	11 2
Muriate of Potash	12 5	11 1	7 4
Agricultural Salt	3 2	3 4	2 6

Table showing the average Retail Prices of Agricultural Seeds in Northern Ireland in the years 1922, 1923, and 1924.

Description.	Unit.	Average Price.		
		1922.	1923.	1924.
Grain (Seed):—		s. d.	s. d.	s. d.
Wheat (Irish Grown)	Per cwt.	18 1	14 5	13 7
,, (Imported)	,,	20 11	17 11	17 1
Oats (Irish Grown)	,,	13 3	11 3	12 6
,, (Imported)	,,	17 0	15 7	15 5
Barley (Irish Grown)	,,	13 6	11 4	12 9
,, (Imported)	,,	19 5	15 5	14 3
Rye (Irish Grown)	,,	14 7	12 4	11 6
,, (Imported)	,,	17 5	16 10	16 7
Root and Green Crops (Seed):—				
Turnip (Swede)	Per lb.	2 1	2 5	1 6
,, (Aberdeen)	,,	1 4	1 9	1 1
Mangels	,,	1 3	1 8	1 4
Carrots	,,	4 10	5 2	4 6
Parsnips	,,	4 0	5 9	3 3
Rape	,,	1 2	1 0	0 11
Vetches	Per stone	3 8	3 0	2 7
Clover Seeds:—				
Red	Per lb.	1 7	1 9	1 3
White	,,	2 6	3 3	2 10
Wild White	,,	20 1	21 6	10 2
Alsike	,,	1 7	1 6	1 2
Flax Seed:—				
Home Saved	Per bag	50 0	—	44 9
Dutch	,,	68 11	59 4	68 4
Canadian	,,	59 11	56 11	60 6
Russian	,,	63 4	57 9	61 9
Pernau Crown	,,	—	60 0	70 0
Grass Seeds:—				
Perennial	28 lbs. per bushel	12 5	11 7	13 3
,,	26 ,, ,,	11 10	10 6	12 5
,,	24 ,, ,,	11 9	9 6	11 9
Italian	22 ,, ,,	10 2	11 4	10 9
,,	20 ,, ,,	9 6	10 5	10 2
,,	18 ,, ,,	9 3	9 6	11 9
Cocksfoot	Per lb.	1 6	1 0	1 4
Meadow Fescue	,,	1 8	1 1	1 0
Timothy	,,	0 11	0 10	0 10

Average Retail Prices of Feeding Stuffs per cwt. in Northern Ireland during the years ended 30th September, 1922, 1923, and 1924.

Description.	Average Price.		
	1922.	1923.	1924.
Corn and Corn Offals :—			
Maize (whole)	9 4	10 0	10 6
,, (meal)	10 1	10 7	11 0
Bran	11 6	10 7	10 10
Pollard	12 0	11 0	11 0
Linseed (whole)	25 5	24 0	24 6
Cakes :—			
Linseed (home made)	18 2	16 2	15 1
Linseed (foreign)	17 5	14 10	14 0
Cotton (decorticated)	16 5	15 3	14 10
Cotton (undecorticated)	11 8	9 9	9 11
Palm Nut	10 6	8 10	9 0
Coco ,,	11 3	12 4	10 3
Meals :—			
Linseed	26 3	25 3	25 9
Linseed Cake	18 1	15 5	14 9
Cotton Seed (decorticated)	16 1	14 11	14 7
Barley	13 4	12 9	11 11
Crushed Oats	12 11	11 10	12 0
Bean Meal	15 3	15 0	14 5
Palm Nut Meal	10 5	8 10	9 2
Fish Meal	22 2	19 3	21 4
Grains, etc. :—			
Brewers' Grains Dried	10 3	9 5	9 3
,, ,, Wet	2 0	1 10	—
Distillers' Grains Dried	9 3	8 3	8 11
,, ,, Wet	1 11	1 8	1 11
Dried Yeast	12 3	16 5	16 4

B2175 Wt. 126 500 6/25 N.W.. Ltd.